JOURNAL

OF THE

Indian Medical Association

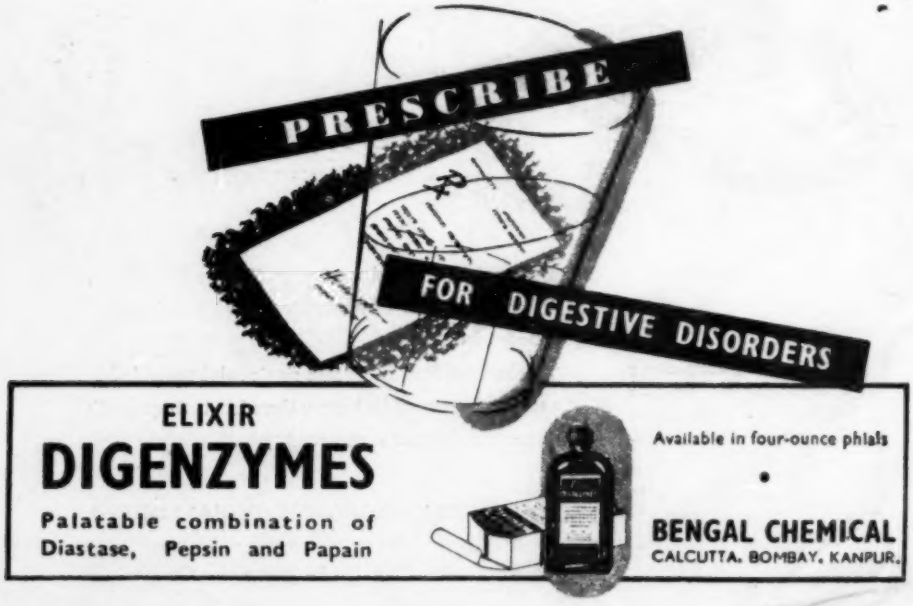
VOLUME XXII
NUMBER 12

CALCUTTA
SEPTEMBER 1953

Indian Medical Association
Central Office,
"Hanging Bridge", Daryaganj,
Delhi-7

Office of the Journal
23, Samavaya Mansions,
Corporation Place, Calcutta-13
'Gram-'Inmedici, Calcutta' :: Phone : 24—2197

Annual Subscription
Inland Rs. 18/-
Foreign Rs. 21/-
Post Free



When selecting a sulphonamide STOP and THINK, for there is danger of Renal Blockage if you do not choose wisely.

'Sulphamezathine' is the safe single sulphonamide, and in ten years of its history there has been no death due to renal blockage recorded.

Available in the form of tablets (0.5 Gm.) ; oral suspension ; lozenges ; powder ; and as the sodium salt in sterile solution for parenteral administration.

IMPERIAL CHEMICAL INDUSTRIES (INDIA) LIMITED

Calcutta Bombay Madras Kanpur New Delhi
Ahmedabad Amritsar Bangalore Cochin

ICF 189

TABLE OF CONTENTS

	Page
ORIGINAL ARTICLES :	
1. Aureomycin and Terramycin in Infective Hepatitis and Hepatic Coma—Robert Heilig and R. K. Sharma	481
2. Thoracoplasty in Pulmonary Tuberculosis —J. K. Nag, R. Chakravarty and S. Adhya	485
3. Treatment of Ascariasis in Children with Hetrazan—P. V. Kurian	488
4. Chronic Intestinal Amoebiasis —K. R. Mahajan	490
5. Consumption Level of Depressed Classes (Nonia and Chamar) in Champaran (Bihar) —S. B. Lal	492
PRACTITIONERS' CORNER :	
Medical Treatment of Cases of Enlarged Prostate—C. H. Primlani	495
SPECIAL ARTICLE :	
Renal Factors in Oedema —Himansu S. Chakravarti	497
CASE NOTES :	
1. Sirenomelian Monster (A Case of Sympus apus) —B. P. Tribedi and D. Barua ...	503
2. Suicidal Poisoning by Dinitrophenol —S. Ananta Swamy	504
3. Poisoning due to Artificial Oil of Bitter Almonds —R. A. Desai	505
EDITORIAL :	
Thoracoplasty in Lung Tuberculosis	507
CURRENT MEDICAL LITERATURE	508
CURRENT TOPIC :	
I. M. A. Arranges Residency Training Abroad for Indian Doctors	510
NOTES AND NEWS	511
CORRESPONDENCE	512
REVIEWS	514
SUPPLEMENT	xciii
INDEX TO VOLUME XXII	a

AUREOMYCIN

HYDROCHLORIDE CRYSTALLINE

The antibiotic range of aureomycin is unsurpassed... A dosage of 1 Gm. daily is usually curative, and the total dose required is lower than with other antibiotics... The early use of aureomycin may avoid extensive surgery...

Lederle

DRAMATICALLY EFFECTIVE

REMARKABLY ECONOMICAL

The abbreviation of hospital stay and convalescence thus made possible by aureomycin saves your patient many times its cost.

Capsules: 250 mg. *Intravenous:* 100 mg. *Ointment:* 30 mg. per Gm.—½ ounce. *Ointment (Ophthalmic):* 10 mg. per Gm.—½ ounce. *Oral Drops:* 100 mg. per cc.—10 cc. with dropper. *Soluble Tablets:* 50 mg. *SPERSOIDS* Dispersible Powder:* 3.0 Gm. per teaspoonful—12 teaspoonfuls. *Troches:* 15 mg. *Vaginal Powder:* 200 mg. per Gm.—5 Gm. vial.

*TRADE MARK

LEDERLE LABORATORIES (INDIA)
P. O. B. 1994, BOMBAY 1

In fluid replacement therapy....

'PLASMOSAN'
polyvinylpyrrolidone solution

is a suitable preparation for the restoration and maintenance of the circulatory blood volume. It is free from many of the disadvantages of other infusion fluids such as saline and dextrose-saline.

Molecular weights of the chosen fraction of polyvinylpyrrolidone vary between 30,000 and 60,000 as compared with a figure of 69,000 for serum albumin, and a 3·5 per cent. solution shows variations in colloidal osmostic pressure ranging between 0·033 and 0·040 atmospheres. The viscosity of such a solution is of the same order as that of blood and about twice that of water.

Polyvinylpyrrolidone does not readily escape through the vessel wall, and is excreted at a rate comparable with the regeneration of the plasma proteins.

We shall be glad to send detailed literature on request

'PLASMOSAN' is supplied in standard transfusion bottles of 540 c.c.

manufactured by
MAY & BAKER LTD

distributors
MAY & BAKER (INDIA) LTD. BOMBAY · CALCUTTA · MADRAS · NEW DELHI · GAUHATI

INDEX TO ADVERTISERS

	Page
Abco's Pharmaceutical Works (India) Ltd.	xlvi
Allen & Hanburys Ltd.	vi
Alembic Chemical Works Co., Ltd.	x
Alliance Trading Corporation	xlvi
Alkaloid Research Laboratories Ltd.	xlvi
Amalgamated Chemicals & Dyestuffs Co. Ltd.	xxxi
Antiseptic	xxxix
Atlantis (East) Ltd.	xvi
Bayer Products Ltd.	xix
Bengal Chemical & Pharmaceutical Works Ltd. Front Cover,	xxviii
Bengal Immunity Co., Ltd.	xxviii
Boots Pure Drug Co. (India) Ltd.	xxxiii
Brahmachari Research Institute	xxxix
British Schering Ltd.	iv
Brand & Co. Ltd.	ix
British Drug Houses (India) Ltd.	xliii
Burroughs Welcome & Co. (India) Ltd.	vii
Calcutta Chemical Co., Ltd.	xliv
Calcutta Polyclinic Ltd.	xlvi
Calcutta Clinical Research Assn. Ltd.	xlvi
Chemical & Surgical Works Ltd.	xliii
Cilag-Hind Limited	xxxii
Ciba Pharma Ltd.	xxxiv
Cipla Ltd.	xxxvi
Coates & Cooper Ltd.	xii
Crookes Laboratories Ltd.	xxii
Darbara Singh & Sons Ltd.	iii
Dragon Chemical Works (R) Ltd.	xlii
Eastern Drug Company Limited	xxxv
East India Pharmaceutical Works Ltd.	xxiv
Franco-Indian United Laboratories	xli
G. D. A. Chemicals Ltd.	xlviii
General Electric Co. of India Ltd.	xxvi
Glaxo Laboratories (India) Ltd.	xxiii, xlvii
Godrej Soaps, Ltd.	viii
Hind Chemicals Ltd.	xiv
Horlicks Ltd.	xvi
I. M. S. Laboratory Ltd.	xxxviii
Imperial Chemical Industries (India) Ltd. 2nd Cover	
Indian Health Institute & Laboratory Ltd.	xii
John Wyeth & Brother Ltd.	xlv
Juggat Singh's Son & Bro.	xlviii
Lederle Laboratories (India) Ltd.	i
May & Baker Ltd.	ii
Navaratna Pharmaceutical Laboratories	xlvi
Neo-Pharma Limited	xi
Nestle's Products (India) Ltd.	xviii, xl
Oriental Research & Chemical Lab. Ltd.	xxxi
Parke, Davis & Company, Ltd.	3rd. Cover
Parle's Products	xvii
Pfizer International Service Co. Inc.,	xxi
Pharmed Ltd. (Menley & Jones, Ltd.)	xxix
Pharmed Ltd. (Smith Kline & French International Co.)	xxv, xxvii
Philips Electrical Co. (India) Ltd.	xxxvii
Ranbaxy & Co., Ltd.	4th. Cover
Raptakos, Brett & Co., Ltd.	xx
Sarabhai Chemicals	xxx
Scientific Publication Concern	xlvi
Stadmed Limited	xlii
Standard Chemical & Pharmaceutical Works	xlii
T. J. Smith & Nephew Ltd.	v
Union Drug Co., Ltd.	xx
W. T. Suren & Co. Ltd.	xiii
William R. Warner & Co., Ltd.	xv

Own **"OLYMPUS"** *for*

Service • Stability • Superiority

LABORATORY MICROSCOPE

IMPROVED MODEL GB

Mechanical Tube Length 160 mm + Graduated Draw Tube + Fixed Square Stage with Built on Graduated Mechanical Stage + Fine Adjustment of Double Lever type without scale + Condensor n.A. 1.2 (with iris) – movement by Rack & Pinion + Triple Nose-piece + Interchangeable for Dark Field Condensor, Phase Contrast Accessories, Binocular and Monocular Attachments.

Huygen's Eyepieces 5x, 10x and Periplan 15x + Achromatic Objectives 10x, 40x and 100x Oil Immersion . . Magnification : 50x–1500x.

PRICE Rs. 710/-

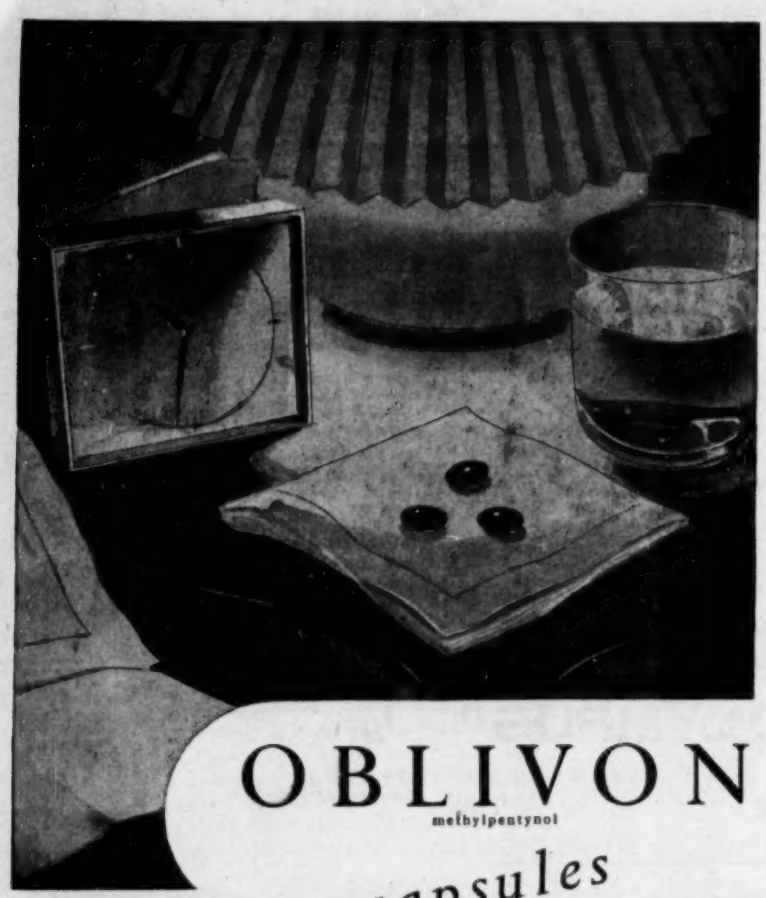
For demonstration and other particulars contact your dealer or the sole agents :—

DARBARA SINGH & SONS

14, Bow Bazar Street, Calcutta 12. P. O. Street, Sadar Bazar, Delhi 6. 166, Hornby Road, Fort, Bombay 1.

Also available various other models.

Guaranteed for 3 Years



OBLIVON
methylpentynol

2 to 4 capsules
—a safe, effective hypnotic

OBLIVON capsules (250 mg. methylpentynol) are available in containers of 25 and 100.
made in England by
BRITISH SCHERING LIMITED · LONDON

BS

Full descriptive literature gladly sent on request.
INDIAN SCHERING LIMITED
P.O. Box 1125, Bombay, 1.

Only 3 Gypsona bandages are needed for this SCAPHOID CAST

GYPSONA IS RECOGNIZED as the most economical plaster of Paris bandage on account of its exceptionally high plaster content. Moreover, every bandage is uniform and it is possible to determine beforehand how many are required for a particular cast.

This scaphoid cast was constructed with one 6" × 3 yds. and two 4" × 3 yds. Gypsona bandages. A slab was made with the 6" bandage and laid down the dorsum of the hand and forearm, and the cast was completed by applying the two 4" bandages round the forearm, wrist and hand – up to the distal joint of the thumb.

Gypsona
TRADE MARK

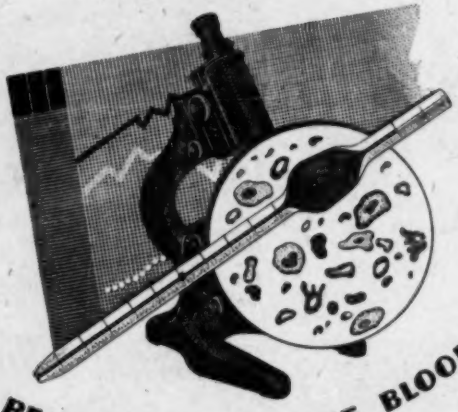
PLASTER OF PARIS BANDAGES

Made in England by T. J. SMITH & NEPHEW LTD., HULL.

Enquiries to :

J. L. MORISON, SON & JONES (INDIA) LTD.

P. Box 6527 BOMBAY–26. P. Box 387 CALCUTTA. P. Box 1370 MADRAS.



RAPID RESTORATION OF THE BLOOD PICTURE

The treatment of pernicious anæmia has been simplified by the use of vitamin B_{12} (Cyanocobalamin).

Euhaemon, a sterile solution of vitamin B_{12}, is issued in two strengths, 50 and 100 micrograms per c.c. and is now available in rubber-capped vials of 10 c.c. of either strength, as well as in ampoules of 1 c.c.

Euhaemon restores the megaloblastic blood picture to normal and counteracts the neurological phenomena which are so frequently associated with pernicious anæmia.

It has a high hæmatopoietic activity in sprue, in many cases of nutritional macrocytic anæmia and in certain cases of macrocytic anæmia of infancy.

EUHAEMON

Trade Mark

Vitamin B_{12}

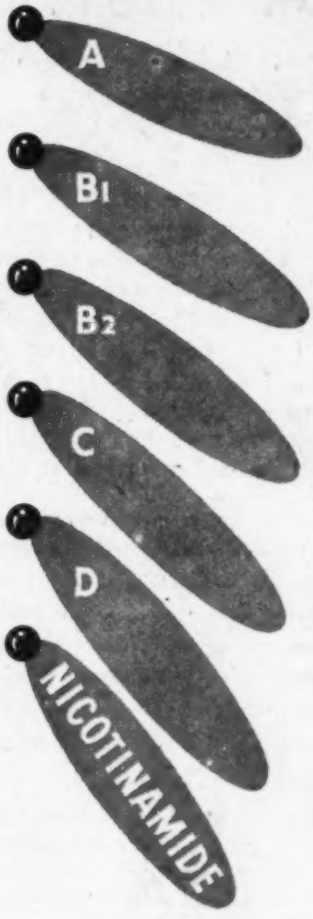
Literature on application.

ALLEN & HANBURYS LTD
(INCORPORATED IN ENGLAND)
CALCUTTA BOMBAY

new 'KEPLER' BRAND

MULTI-VITAMIN CAPSULE

for vitamin deficiency diseases



The new 'Kepler' Multi-Vitamin Capsule provides, in balanced formula, the six principal vitamins known to be essential to human nutrition, namely vitamins A, D, B_1, B_2, C and Nicotinamide. 'Kepler' Multi-Vitamin Capsules are specially suitable for

Scurvy	Dental caries	Anorexia
Rickets	Nutritional œdema	Neuritis
Beriberi	Intestinal atony	Infantile tetany

'Kepler' Multi-Vitamin Capsules are prepared to the same standard of pharmaceutical care and precision that has made 'Kepler' Cod Liver Oil with Malt Extract known and respected by the medical profession throughout India.

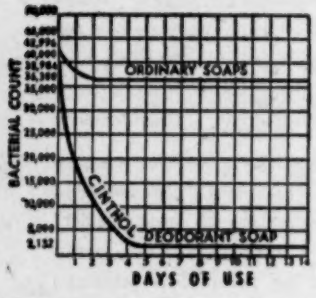
Made in England by
The Wellcome Foundation Ltd. for
BURROUGHS WELLCOME & CO. (INDIA) LTD.
BOMBAY

A DOCTOR'S DUTY...

...is to keep abreast of the latest advances in his field. CINTHOL, is the only soap containing epochmaking Hexachlorophene—Dihydroxy-Hexachloro-Diphenyl-Methane or G-11, which is the first and *only* proved, effective and non-irritating germicidal and deodorising chemical for soaps. It is brought to India by Godrej after amazing success in America and Europe for the last ten years and with actual scientific proofs based on regular and continuous tests.

A standard patch-test by Schwartz has proved that revolutionary G-11 soap is *milder* than the best grade of ordinary soap. Cinthol drastically reduces pathogenic and non-pathogenic organisms, and is non-toxic.

Cinthol with 2% Hexachlorophene purifies the skin and keeps it free from impetigo, acne, boils, styes, cellulitis, carbuncles, furuncles, athelete's foot, prickly heat, etc. It also gives protection against cutaneous infections from barber and beauty shops and hair follicle infections. The regular use of Cinthol prevents dermatitis. Fragrant, mild Cinthol is recommended for top-to-toe use: ideal for face, hair ... harmless to the eyes.



The bacterial count of the skin is lowered to and kept at 5% of the normal after five days and onwards of regular use. Therefore, the skin is kept surgically clean.

FOR THE SURGEON

The laborious and time-consuming scrub—technique is eliminated by the substitution and *regular* use of CINTHOL at home and in the office. A 3-minute wash with Cinthol before an operation eliminates the use of alcohol or iodine, which is often employed to degerm the surgeon's skin. This practice has been in use extensively in operating theatres, dental clinics and general departments of hospitals in Canada and USA for many years.

Godrej Hair Tonic with G-11 prevents dandruff. For best results use with Cinthol.

Godrej Shaving Stick also available with G-11. It minimises the danger from cuts and abrasions—and is milder than ordinary shaving soaps.

Godrej have the *exclusive* rights for the use of G-11 in India.

Illustrated literature with bibliography freely supplied on application:

Godrej SOAPS, LTD.

Bombay — Calcutta — Madras — Cochin — Delhi — Ahmedabad — Hyderabad.

Member

INDIAN SOAP & TOILETRIES MAKERS' ASSOCIATION.

PURE
POTENT
FREE-FLOWING
PPF
PROCAINE PENICILLIN FORTIFIED
DUMEX

PROCAINE PENICILLIN FORTIFIED

DUMEX

The outstanding qualities of P. P. F. (DUMEX) have made this product the most popular repository penicillin available.

Procaine Penicillin Fortified (DUMEX) is

Pure

Potent &

Free-flowing

Special attention is paid to the purity of P. P. F. (DUMEX) and it can be said with confidence that side reactions with the product are extremely rare.

Each mg. of P. P. F. (DUMEX) contains the equivalent of 1050 units of Penicillin. This potency is the highest amongst all preparations of this type.

P. P. F. (DUMEX) is microcrystalline so that the suspensions flow easily without causing any clogging of the injection needle. With P. P. F. (DUMEX) the inconvenient "double injection" is never necessary.

In addition to the usual single-dose vials containing 300,000 units Procaine Penicillin G and 100,000 units Crystalline Sodium Penicillin G, we are pleased to announce the introduction of a 5-dose vial containing a total of 2,000,000 units Penicillin per vial, i. e. 1,500,000 Procaine Penicillin G and 500,000 Penicillin G Sodium.

To each single-dose vial 0·9 c. c. diluent should be added and to the 5-dose vial 4·5 c. c. of diluent. These amounts have been arrived at after thorough investigation and a greater amount of diluent is neither necessary nor desirable. If the correct amounts of diluent are added, P. P. F. (DUMEX) will never cause clogging of the injection needle.

DUMEX DUMEX DUMEX

DUMEX LIMITED

WAVELL HOUSE, GRAHAM ROAD, BALLARD ESTATE, BOMBAY 1

When replying, please mention The Journal of the Indian Medical Association.

A VALUABLE SOURCE OF PROTEIN

Indicated in:

Pre-and post-operative treatment

Febrile conditions

Pregnancy and lactation

Dysentery etc.

Clinical observation shows that these conditions are accompanied by protein depletion, resulting in a negative nitrogen balance. The condition of the patient may further aggravate this, owing to his inability to consume the food offered. In such cases care should be taken to include in the diet selected foods of high protein value which are palatable and easy to assimilate.

Brand's Essence of Chicken is a first-class protein of animal origin. Being partly hydrolised, it is capable of easy ingestion, digestion and absorption. It is extremely palatable and may be taken either as a jelly or as a liquid. It is an ideal means of supporting convalescence and restoring a positive nitrogen balance.

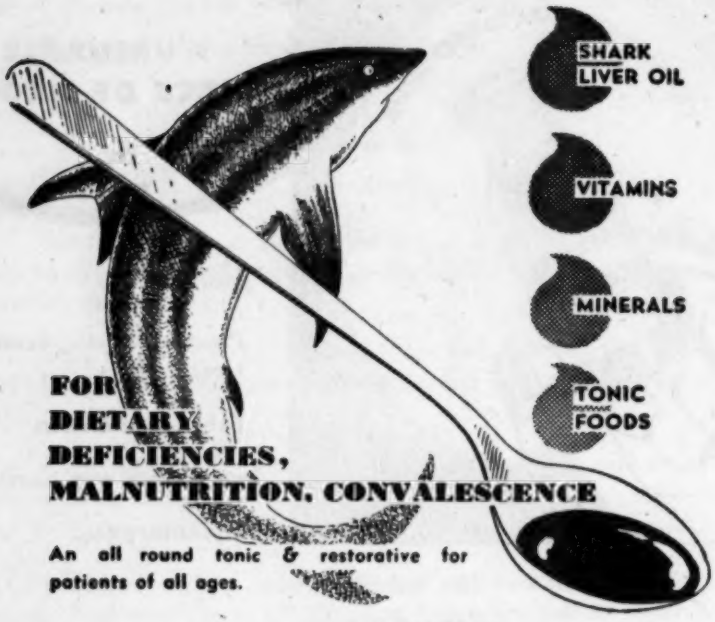
BRAND'S ESSENCE OF CHICKEN

IN 10 CC PHIALS

Manufactured by: BRAND & CO., LTD., LONDON

Agents, GRAHAMS TRADING CO., (INDIA) LTD.

CALCUTTA — MADRAS — BOMBAY — DELHI.



FOR DIETARY DEFICIENCIES, MALNUTRITION, CONVALESCENCE

An all round tonic & restorative for patients of all ages.

COMPOSITION

Each ounce of SHARKOFERROL represents :—

Vitamin A (from 40 mins of Shark Liver Oil approx.)	20,000 I.U.
Vitamin D	4,000 I.U.
Saccharated Oxide of Iron	3 Gms.
Hypophosphites of Lime, Sodium & Potassium	10 grs.
Vitamin B_1	3 mgms.
Vitamin B_2	2 mgms.
Niacinamide	30 mgms.
Copper & Manganese	Traces
Palatable Base enriched with Flavoured Malt Extract	Q. S.

SHARKOFERROL

In bottles of 1 lb

Alembic

ALEMBIC CHEMICAL WORKS CO. LTD., BARODA 3.

Toniazol

Provides Energy
Abolishes Fatigue
Restores Appetite

In Convalescence
Postpartum
Asthenia and Cachexia
Low blood pressure
Physical and mental exhaustion.

Dosage
1-2 teaspoonsful 2-3 times daily before meals

Children are given correspondingly smaller doses.

Original bottles of 6 ozs.

KNOLL

KNOLL A.-G. - Chemical Works, Ludwigshafen-on-Rhine, Germany
Sole Importers: **NEO-PHARMA** Limited, Kasturi Buildings, Churchgate Reclamation, Bombay 1

Some of our "HEALTH" Specialities

(TONICS & RESTORATIVES)

★ *VITOMALTONE*

A palatable Tonic Syrup with honey and malt base, containing Vitamins in massive doses, with Minerals. Methionine & Choline.

★ *VINO-COD*

A tonic wine for General Debility and Rundown conditions, containing Vitamins A and D, Minerals, Peptone, Glycerophosphates and Alcohol 16 %v/v.

★ *VINTEX-FORTE*

A Tonic Cordial with Essential Vitamins, Minerals, Nuxvomica Cinchona, Caffeine Alcohol 31% v/v.

★ *NEUROLECITHIN*

The unique Tonic for exhausted nerves and brain. Containing Calcium, Potassium, Sodium and Strychnine Glycerophosphates, Lecithin, and Alcohol 10% v/v.

★ *KARNOVINE*

The ideal restorative for Expectant and Nursing mothers containing Vitamin B_1, Iron, Peptone and Glycerophosphates with Malt Extract in Alcohol 10% v/v.

★ *B. COM.* (Vitamin B Complex)

Tonic specially for the Neuro-paralytic Syndromes and for functional Heart disease, Gastro-intestinal disorders, containing Vitamin B_1, B_2, B_6, Niacinamide, Glycerphos, of Sodium and Calcium, Folic Acid & Alcohol 10% v/v.

Indian Health Institute & Laboratory Limited.

Manufacturers of Biological, Pharmaceutical & Chemotherapeutic Products.

DUM DUM CANTT., CALCUTTA—28

Madras Depot :	North Bengal Depot :	Assam Depot :	E. Punjab Depot :
4-149, Broadway, Madras 1.	Vivekananda Palli, Siliguri, Darjeeling.	Panbazar, Gauhati.	Goraya (Jullunder) E.P.Ry.

In confidence . . .

Even in these enlightened days, guidance on methods of family planning can do much to remove anxiety and promote a patient's mental and physical well-being. Gynomin entirely fulfils the requirements of a modern contraceptive and may be accepted with confidence.

- Spermicidally efficient
- Clean in application—non-greasy
- Harmless to health
- Keeps perfectly in all climates

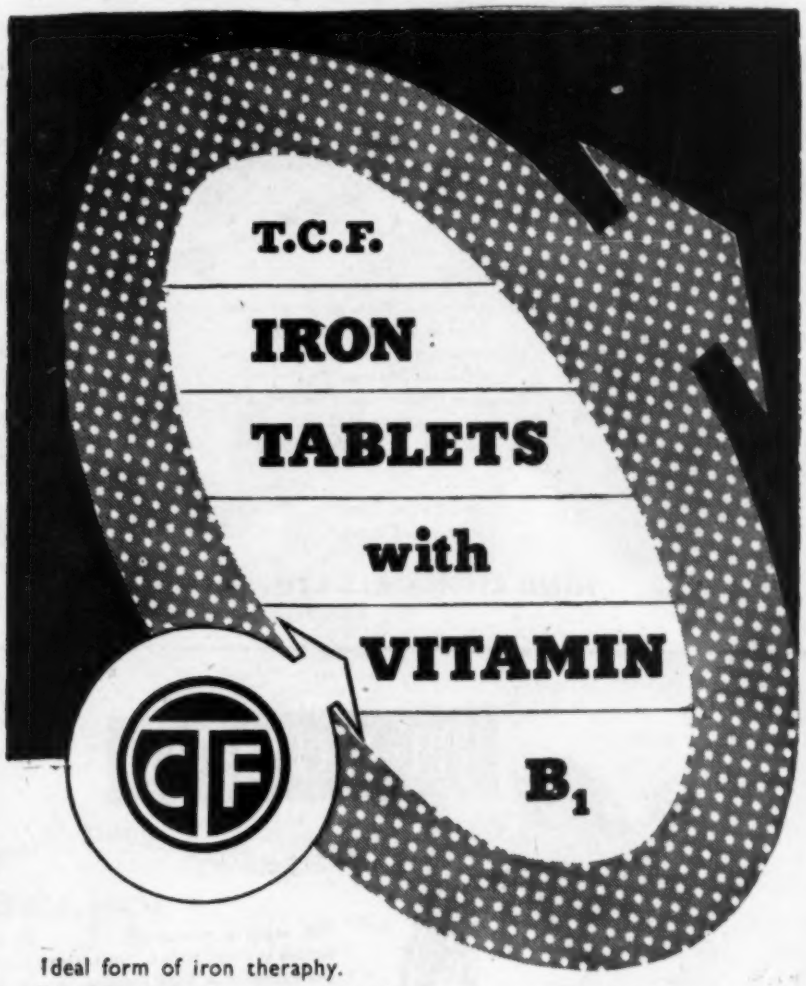
GYNOMIN

The scientifically balanced, antiseptic and deodorant contraceptive—in tablet form

Medical Literature and samples on request

Formula No. C D L 1040.

COATES & COOPER LTD *West Drayton Middlesex, England*



Ideal form of iron theraphy. The minute traces of copper and manganese contained in T.C.F. Iron Tablets with Vitamin B_1 act as catalytic agents, and render the iron fully assimilable. Vitamin B_1 counteracts any constipating action.

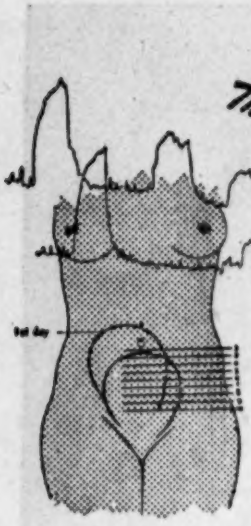
In bottles of 50, 100 and 500 tablets; also tins of 1000 and 5000 tablets.

A product of
TEDDINGTON CHEMICAL FACTORY LTD.
(Biological & Pharmaceutical Laboratories)
Suren Road, Andheri, Bombay.

Sole Distributors:
W.T. SUREN & CO. LTD.
Post Box 229, Bombay 1.

Branches:
CALCUTTA: P. O. Box 672.
MADRAS: P. O. Box 1286.

WT. 7225



ERGOSEAL

The Stabilised Ergot preparation

Ergot therapy is called for at critical moments. The ergot preparation must be carefully *standardized* and *stable* in tropical climate. **ERGOSEAL** fills these requirements admirably. The *sealed* gelatin capsule packing leads to additional stability in hot and humid weather.

★ **ERGOSEAL** contains the total alkaloids of Ergot.

HIND CHEMICALS LTD.
KANPUR.

HI-NUTRON

restores nitrogen equilibrium

The negative nitrogen balance in illness leads to breakdown and excretion of body proteins like those of the muscles; the patient gets thinner every day.

HI-NUTRON restores the nitrogen equilibrium preventing waste during illness and aiding convalescence.

HI-NUTRON contains the protein 'Myosin' which provides all the essential amino acids.

Ampoules of 5 and 10 cc.

HIND CHEMICALS LTD, KANPUR.

AGAROL *Mineral oil aperient emulsion with phenolphthalein and agar-agar; safe in pregnancy and after-care.*

ANUSOL *Haemorrhoidal Suppositories and Ointment: decongestive, demulcent without anaesthetics.*

GELUSIL *Tablet-compressed mag. trisil. and aluminium hydroxide: in peptic ulcer, hyperacidity and gastritis.*

DIATRIN *A superior and effective antihistaminic of low toxicity with minimum side-effects.*

VEGANIN *Antipyretic, sedative, analgesic: indicated in fevers and influenza.*

VERACOLATE *True cholagogue-choleretic in hepato-biliary disease, bile deficiency and cholecystitis.*

UROLUCOSIL *The sulphonamide of choice in B. coli infections of the urinary tract.*

VITAMINS **THERA-VITA-** *Therapeutic Vitamin Capsules.* **HEMOSULES** *Vitamin B factors with iron, liver, etc.* **OMNI-BETA** *improved, Vitamin B factors in liquid form.*

William R. WARNER — LONDON and NEW YORK.

Distributors: MARTIN & HARRIS LTD.,
Mercantile Buildings, Lall Bazar, Calcutta, also at Bombay, Madras and Delhi.

'DETTOL' *for Protection*

• Sterilization of instruments.
• Washing and disinfecting surgeons' and nurses' hands.
• Pre-operative skin disinfection—and wherever there is danger of infection.
DETTOL

ATLANTIS (EAST) LTD.
P. O. Box No. 664, Calcutta

Write for FREE 'Dettol' Products' booklet.

for expectant and nursing mothers

Made from full-cream fresh milk and the nutritive extracts of wheat and malted barley, Horlicks forms an excellent addition to the diet of expectant and nursing mothers.

Physiological tests have shown that Horlicks has a definite anti-ketogenic value; that its proteins are promptly digested and absorbed, and that its carbohydrates are remarkably well tolerated and utilised. Clinical experience confirms these tests. If it is taken regularly during pregnancy Horlicks helps to prevent and relieve morning sickness. Many mothers who have previously failed to breast feed their babies have been able to do so after taking Horlicks regularly. It is the opinion of many doctors and nurses that Horlicks ensures a regular supply of breast milk.

HORLICKS

PRESCRIBED WITH CONFIDENCE FOR OVER SEVENTY YEARS

HL 3773

VITAMINS

As a medical man you will be pleased to know that the vitamins added to Parle's GLUCO Biscuits come from the famous Swiss laboratory.

LABORATORY REPORT

Here is the Report dated 15-5-'52 of the Hoffmann-La Roche Laboratories on the analysis of Parle's Vitamin-enriched Gluco Biscuits:

Vitamin B_1	-	*1.56 mg. per lb.*
Vitamin B_2	-	*1.12 mg. per lb.*
Niacin	-	*16. 8 mg. per lb.*

Parle's

Gluco BISCUITS

ENRICHED WITH VITAMINS

NLMB/11

Prepared for infants' special needs . . .

Made by Nestlé's world wide manufacturers of milk products, with a reputation of over 80 years, Lactogen is modified especially for infant feeding.

The composition is strictly uniform, and by homogenization, the fat globules are made even smaller than those of human milk, facilitating digestion, while pasteurization has ensured the removal of pathogenic organisms.

Lactogen is also suitably fortified to provide adequate (but not excessive) intake of essential Vitamins A & D & Iron, based on standards recommended by the National Research Council, Washington.

LACTOGEN

"THE BETTER MILK FOR BABIES"

A NESTLÉ'S PRODUCT

NESTLÉ'S PRODUCTS (INDIA) LTD. P.O. BOX 306 CALCUTTA. P.O. BOX 315 BOMBAY. P.O. BOX 180 MADRAS.

In Bronchial Asthma

Control of the asthmatic attack!

Franol has been found most effective in maintaining a constant control of the bronchial asthmatic patient. As well as ensuring relief of symptoms it provides confidence: and this helps to solve a problem which is so often psychological. Franol offers a balanced and effective action at all times and is not habit forming

FRANOL

TRADE MARK

Manufactured in England by

BAYER PRODUCTS LTD., Africa House, Kingsway, London, W.C.2

Full literature and samples may be had on request

MAC LABORATORIES LTD., 98 Zaveri Bazar, BOMBAY, 2

NEW!

SUCCINATE-SALICYLATE THERAPY

IN

RHEUMATIC ARTHRITIS

SUCCI-SALYL

(Calcium Succinate-Sodium Salicylate enteric coated tablets)

ANTI-ARTHRITIC

ADVANTAGES

OVER THE USUAL SODIUM SALICYLATE THERAPY

ENABLES the use of Sodium Salicylate for protracted periods with perfect tolerance.

MAINTAINS the sedative effect brought about by Sodium Salicylate.

INCREASES tissue oxidation

DOSE: 3 to 4 tablets 3 times daily. Bottles of 100.

Particulars from: RAPTAKOS, BRETT & CO. LTD., WORLI, BOMBAY.

U. D.
SULFO—ENTERON

U. D. SULFO-ENTERON combines the effects of both Iodochlorohydroxyquinoline and Phthalylsulphacetamide and provides a unique and highly effective therapy in combined Amœbic and Bacillary infections. It is administered orally and is comparatively non-toxic in doses within therapeutic limits.

PACKINGS

Phials of 20 & 100 tablets (grs. 7½ each)

T' Phones :— Bank 7211 „ 1901

UNION DRUG CO. LTD.

285, BOWBAZAR STREET CALCUTTA—12

T' Gram :— "Benzoic" Cal.

Combiotic* Pfizer

effective ● against urinary tract infections, including gonococcal infections; upper respiratory tract infections; and other infections due to gram-positive and gram-negative organisms.

convenient ● special silicone-coated vials permit accurate dosage on withdrawal.

● contains both penicillin and dihydrostreptomycin in a single injection.

● needs no refrigeration.

stable ● maintains potency for 24 months.

Combiotic : 1 Gm. Formula consists of—
300,000 units—crystalline procaine penicillin G.
100,000 units—buffered crystalline sodium penicillin G.
1 Gm.—dihydrostreptomycin (as the sulfate) for 3-cc. dose.

Combiotic : 0.5 Gm. Formula consists of—
300,000 units—crystalline procaine penicillin G.
100,000 units—buffered crystalline sodium penicillin G.
0.5 Gm.—dihydrostreptomycin (as the sulfate) for two-cc. dose.

***Trade Mark**

PFIZER INTERNATIONAL
Service Co. Inc.,
25, Broad Street, New York 4, N.Y., U.S.A.

Pfizer

TERRAMYCIN
COMBIOTIC
PENICILLIN
STREPTOMYCIN
DIHYDROSTREPTOMYCIN
POLYMYXIN
BACITRACIN
COTINAZIN
PRONAFEN

EXCLUSIVE DISTRIBUTORS :
DEY'S MEDICAL STORES LTD.,
BOMBAY :: CALCUTTA :: DELHI :: MADRAS

Prolonged

Local

Anaesthesia

A single injection of Efocaine PRODUCES CONTINUOUS LOCAL ANAESTHESIA AVERAGING 6-12 DAYS IN DURATION but frequently even longer. This important advance in the scientific control of pain is of particular significance in the post-operative period. A long lasting depot anaesthetic is now available which does not rely on the use of oil, vaso-constrictor agents or gelatin as a retarding vehicle. Efocaine can be injected either deeply subcutaneously or intramuscularly and it does not interfere with wound healing. It is of particular interest in rectal surgery.

EFOCAINE

Available in 15ml. vials

THE CROOKES LABORATORIES LIMITED *(Incorporated in England)*
COURT HOUSE · CARNAC ROAD · BOMBAY 2

BECADEX

high potency multi-vitamin tablets

during periods of rapid growth

Inadequate or unbalanced diets often result in deficiencies of more than one vitamin. Becadex high-potency multi-vitamin tablets provide a ready treatment for such multiple deficiencies.

During periods of rapid growth, specially in childhood and adolescence, to meet the increased needs for essential vitamins, the diet can be conveniently supplemented with Becadex.

Becadex confers a useful degree of protection against illness; and during illness it often favourably influences the course of the disease.

GLAXO

BECADEX

High potency multi-vitamin tablets in bottles of 25, 100 and 500 tablets.

GLAXO LABORATORIES (INDIA) LTD., BOMBAY . CALCUTTA . MADRAS

Copyright

DERMO-QUINOL

(4% Iodochloro-oxyquinoline in a vanishing cream base)

For

SEBORRHOEIC DERMATITIS
IMPETIGO
IMPETIGINISED ECZEMA
ATHLETE'S FOOT
MONILIASIS
CHRONIC PERIONYCHIA Etc.

THALOCID

Phthalyl Sulphacetamide

For the treatment of :—

* Bacillary Dysentery * Colitis
* Infantile gastro-enteritis
* Chronic Amoebic Dysentery
  For clearing up the secondary infections
* Pre and Post-operative sterilization of the Intestines
* Typhoid and Para-typhoid fevers
* Cholera (early cases)

★

For Further Particulars Please Write to :—

East India Pharmaceutical Works Ltd.,
CALCUTTA-26.

Journal of the
Indian Medical Association

VOL. XXII, No. 12 CALCUTTA SEPTEMBER, 1953

ORIGINAL ARTICLES

AUREOMYCIN AND TERRAMYCIN IN INFECTIVE HEPATITIS AND HEPATIC COMA

ROBERT HEILIG, M.D., F.N.I.,

AND

R. K. SHARMA, M.B., B.S.,

S.M.S. Medical College and Hospital, Jaipur

INTRODUCTION

In this part of the country, infective hepatitis is a serious disease of unpredictable outcome. Towards the end of the first week a considerable proportion develop a fulminant hepatitis which leads to hepatic coma. According to general experience, to which our own was no exception, every case of hepatic coma ended fatally, irrespective of the stage when the patient came under treatment and of the kind of therapy administered, upto the introduction of broad spectrum antibiotics in the treatment of this condition.

As aureomycin proved effective in various viral infections, we tried it in several patients suffering from viral hepatitis. Whereas in cases of mild or moderate degree a definite effect was not obvious, the senior author was much impressed by the result in two of the most severe cases.

CASE REPORTS

Case 1—Gopinath, a well-known *Vaid*, aged 38 years, had been treated for more than two months in Calcutta before he came for consultation. On 26-9-50, he showed deep jaundice; liver firm, uniformly enlarged, not tender; spleen palpable. Temperature between 99°·6 and 100°·5F. Icterus index 125; van den Bergh test: immediate direct strongly positive. Kahn test—negative. Urine contained large amounts of bile salts and bile pigment. The tongue was coated but moist and the general condition not causing immediate anxiety. Treatment was started with full doses of vitamin B-complex including choline, glucose and insulin, and intravenous injections of hexamine (pyelopurin). The diet contained a fair amount of protein, particularly milk protein, carbohydrates and hardly any fat. After two weeks of this treatment the situation was practically unchanged, except that the patient continued losing weight, felt increasingly depressed and convinced that he suffered from cancer. On 8-10-50, about 11 to 12 weeks after onset of his jaundice, all the treatment was stopped, except vitamin B-complex, and aureomycin was started with the then recommended dosage of 500 mgm. every 6 hours. In less than one week the patient, himself an experienced medical practitioner, reported that appetite and general condition showed some improvement, that the urine was getting lighter and the stool darker. Gradually the liver became softer and smaller, first the right and much later the left lobe, and the temperature which started decreasing from the third day of aureomycin therapy, became normal on the tenth day. Regular reports from Calcutta, where he had resumed his practice, confirmed his complete recovery.

On 24-4-53, thirty months after the attack of hepatitis, this patient has been re-examined and found to be in perfect health. His liver was not enlarged. Urine was straw coloured; it was free from albumen and contain only traces of urobilinogen.

Case 2—This case was more convincing still. On 3-1-51, P. Singh, a peon, aged 28 years, was admitted to hospital, deeply jaundiced and stuporous with a history of fever for 10 days, jaundice for 5 days and semi-consciousness for 12 hours. The tongue was coated and dry, the liver uniformly enlarged, less than two fingers below the costal margin; the spleen, just palpable. The temperature ranged between 100° and 101°F. It was sometimes possible to rouse him from his stupor so far that he opened his mouth and tried to show his tongue, but most of the time he did not respond to verbal stimuli. Icterus index 75; van den Bergh test: immediate direct positive; urine: bile salts and pigment strongly positive. W.B.C. 12,500; neutrophils 65 per cent, lymphocytes 30 per cent, monocytes 5 per cent. There was no doubt that we had to deal with a case of fulminant hepatitis of viral origin with incipient hepatic coma. An intravenous continuous drip of 5 per cent glucose in normal saline was started and vitamin B-complex and vitamin C added to it; insulin and calcium gluconate was injected and choline given orally along with a protein hydrolysate. So far the treatment did not differ from that used in previous cases of severe or fulminant hepatitis, none of whom survived even if signs of clouded sensorium due to hepatic coma were much less pronounced than in the present patient.

Immediately on admission, without waiting for the effect of the routine treatment which according to all our experience could not prevent a fatal outcome, we started with oral aureomycin, 2 capsules of 250 mgm. each every 6 hours, amounting to 2 gm. in 24 hours.

A slow but continuous improvement of the mental condition started about 12 hours after the beginning of aureomycin therapy, which was particularly surprising as in all preceding cases, of whom several had been doctors or nurses so that the observation was especially close, somnolence, once

TABLE I

	29-7-52	2-8-52	7-8-52	12-8-52	16-8-52	19-8-52	28-8-52
W.B.C.	8,700	15,000	—	8,200	—	—	—
Differential count	53.47	80.20	—	—	—	—	—
Malaria parasite	nil	nil	—	—	nil	—	—
van den Bergh test	immediate direct positive	—	immediate direct positive	—	—	—	—
Icterus index	175	—	100-150	—	65	—	20
Blood bilirubin	30 mgm.	29 mgm.	—	—	—	1 mgm.	—
Thymol turbidity	3 U	—	—	—	—	—	8 U
Thymol flocculation	neg.	—	—	—	—	—	—
Blood urea	70 mgm.	—	—	—	—	—	14 mgm.
C.S.F.	n.a.d.	—	—	—	—	—	—

it had started, quickly deepened to stupor and inexorably lead to coma and death. After a little more than 24 hours, the patient tried to pronounce his name, readily showed his tongue and promptly carried out similar orders. Aureomycin was continued in gradually decreasing doses upto a total of 24 capsules or 6 gm. By that time his mental condition and temperature was perfectly normal. On 10-1-51, the leucocyte count was 6,500 and the jaundice showed definite signs of clearing on 27-1-51, the icterus index was 20. Such an effect was beyond all expectation, the more so as reports of the sometimes life saving effect of aureomycin in fulminant hepatitis had not reached us by that time.*

That aureomycin is not the only antibiotic which might act beneficially in apparently hopeless cases of cholæmic coma is illustrated by the following two case reports.

Case 3.—Bh. S., a Brahmin student, 25 years old, was admitted on 29-7-52, deeply jaundiced and in deep coma. The history, obtained from his family and confirmed by the family doctor, revealed that he complained of weakness and loss of appetite one week ago; two or three days later he suffered from fever with rigor which lasted for 2 days and was followed by extreme restlessness, irritability, loquacity and quickly increasing jaundice. Finally, the day prior to his admission, he became completely irrational and violent and soon was unable to recognize his parents; this development was accompanied by a rise of temperature, perhaps not exceeding 100°F., frequent vomiting, perspiration and scanty micturition.

On admission he was in deep coma, not responding either to verbal or to pain stimuli, unable to swallow, and passing urine and stool in bed. Pulse was 110 per min.; B. P.—120/80 mm. Hg.; Temperature 98°·6F. (while perspiring). Respiratory system: diffuse bronchitis. Circulatory system was not much affected. Liver: palpable one finger below the costal margin; spleen: not palpable. Tendon jerks very brisk; neither neck rigidity nor pathological reflexes present.

The laboratory findings have been summarized in Table I.

Urine was dark brown in colour, specific gravity 1030, albumen—nil, sugar—traces, bile pigment and bile salts—strongly positive; microscopic deposit—a few icterus casts.

Treatment for the first 4 days had to be carried out by parenteral routes, swallowing being impossible. A continuous intravenous drip was started with 5 per cent glucose in normal saline to which in 24 hours niacin 400 mgm., vitamin C 1000 mgm. and full doses of vitamin B-complex with insulin and calcium gluconate were added.

Remembering our satisfactory results with aureomycin in one case of impending hepatic coma described above, and in a few other cases meanwhile reported in literature, we thought of giving this patient aureomycin rectally; considering, however, the difficulty of handling him and preventing him from rejecting the drug or knowing whether he has retained it long enough for absorption, we decided to give terramycin intravenously. On 30-7-52, the first dose of 250 mgm. was given in 100 ml. of 5 per cent glucose, repeated twice a day for 5 days, followed by 250 mgm. once a day upto a total of 13 vials equal to 3·25 gm. in 8 days. On 31-7-52, started epistaxis and profuse bleeding from the gums which lasted four hours and stopped after vitamin K and coagulen had been given repeatedly.

On 2-8-52, the temperature rose steeply to 104°F., as there were still abundant signs of bronchitis present, procaine penicillin was given, 8 mega units a day, upto 128 mega units in 16 days.

The condition of the patient remained unchanged in every respect for four days upto 2-8-52. The only consolation we could give his family was that his condition was not getting worse as far as clinical observation permitted to say and although we had never seen anybody recovering from such a cholæma, we also could not remember ever having seen anybody surviving so long in coma without evidence of quickly progressing deterioration.

On 3-8-52, the patient showed signs of regaining consciousness; he opened his mouth and the eyes when asked to do so and seemed to recognize some of his family members. The following day, when he was able to swallow, aureomycin was given orally at the rate of six capsules of 250 mgm. a day, continued up to 22-8-52, amounting to 109 capsules or 28·25 gm.

On that day, 24 hours after waking up from his coma, he started to talk incessantly, sometimes rationally but mostly like a hypomanic psychosis, a condition lasting for five to six days. Whoever entered the ward was called by him and told how happy and healthy he was, how full of energy which even radiated from him to other patients and cured them by his "magic power". During this period his appetite

*A short report of this case had been given by one of us (R.H.) during a symposium on antibiotics at the Annual Meeting of the National Institute of Sciences of India, October, 1951, New Delhi.

TABLE 2

	6-3-53	11-3-53	15-3-53	18-3-53	24-3-53	3-4-53	7-4-53	18-4-53
W.B.C.	10,200							
E.S.R.				10 mm.				
van den Bergh test	immediate direct positive			immediate direct positive			immediate direct positive	
Icterus index	>150		150	>150	150		150	125
Blood bilirubin				20 mgm.				8·4 mgm.
Thymol turbidity		1·5	2		1·5			4
Thymol flocculation		pos.	neg.		neg.			neg.
Goldsol flocculation		neg.	neg.		neg.			neg.
Blood protein						6·67		
Albumen globulin ratio		2·67 : 2·83				3·07 : 3·43		
Alkaline phosphatase				30				
Galactose tolerance urine				2·5 gm. 2 hours	5·83 5 hours			
Albumen	nil			•	pos.		nil	nil
Bile pigment	pos.	pos.					pos.	pos.
Bile salts	neg.	neg.					nil	nil
Urobilinogen	pos.	neg.					nil	
Microscopic deposits	n.a.d.			casts + +				n.a.d.

returned and about one week after emerging from his coma, when his mental condition had become fairly normal, his main interest was to get more food and his only complaint which also caused his discharge on 25-8-52, less than four weeks after admission, was that he did not get enough to eat.

Nevertheless, he recovered completely, he was demonstrated by us in perfect health with all the blood and urine tests negative, on 14-9-52* and re-examined several times since.

Case 4—Rameshwar, a Mahajan, 19 years old, fell ill on 26-2-53, with quickly increasing anorexia, nausea and jaundice which deepened day by day. After two or three days he complained of giddiness, pain all over the body and a feeling of chill and fever.

On 5-3-53, he was taken from his home town, to Jaipur and during the railway journey, which lasted about four hours, he became unconscious and delirious. The following morning he was admitted in deep coma and so violently delirious that we doubted whether it would be possible to keep him in the general ward. He shouted continuously and two men could hardly prevent him from rolling off his bed; hyoscine hydrobromide was required to stop his shouting.

Examination on admission revealed a well built young man with a deep jaundice; pulse 130 per minute, blood pressure 130/80 mm. Hg.; temperature 102·2°F.; heart—n.a.d., lungs: diffuse bronchitis; liver slightly enlarged; spleen not palpable. He was in such a deep coma that nothing could rouse him. There was no neck rigidity present, tendon jerks very brisk, cutaneous reflexes present, pathological reflexes absent.

Table 2 shows the laboratory findings.

Treatment was started immediately with a continuous intravenous drip of 5 per cent glucose in normal saline, to which were added niacin (Pelonin, Glaxo), insulin, calcium gluconate, vitamin B-complex and vitamin C and, within one hour of his admission, terramycin, 250 mgm. in 100 ml. glucose 5 per cent, which was continued to be injected intravenously twice a day for 4 days; in this way he received a total of 2 gm. in 8 injections.

From 11-3-53 to 20-3-53 terramycin was given by mouth, 4 to 6 capsules (250 mgm. each) a day, totalling 42 capsules or 10·5 gm. To eliminate every possible risk, procaine penicillin was given by intramuscular route, 8 mega units per day for six days.

On 8-3-53, the patient started taking notice of his surroundings and by the evening of the same day he could pronounce his name and was mentally fairly clear; from the following day onwards his mental condition remained normal.

The same day also the temperature touched normal and remained so. The general condition improved satisfactorily, appetite returned, vertigo and weakness were not felt again.

The intensity of the jaundice, however, hardly lessened and on 25-3-53, just one month after the onset of his illness, puffiness of the face was noticed; the urine contained albumin and numerous icterus casts. Assuming that an allergic factor might be involved in this renal damage, an antihistaminic (antistine, Ciba) was given; albumin and casts disappeared within a few days but the jaundice decreased only very slowly and was still fairly intense when the patient was demonstrated on 13-4-53.* Subsequently the clearing of the jaundice proceeded somewhat quicker which might have been due to the choleretic effect of nicotinylhydroxymethylamide (bilamidey, Cilag) of which he received 8 intravenous injections at this time.

COMMENT

The clinical course of the last two cases who were roused from a deep hepatic coma with the help of terramycin, injected intravenously, resembles that of similar cases treated with aureomycin (Goldbloom *et al*, 1950). There as here the first sign of a favourable effect was the clearing of the sensorium, the all-round improve-

*Jaipur Branch, Indian Medical Association.

*Jaipur Branch, Indian Medical Association.

ment of the mental condition which preceded any somatic change by several days.

Another point of resemblance is the considerable discrepancy between the results of liver function tests and clinical condition which these authors particularly emphasize and which makes it impossible to base the prognosis of such cases on laboratory reports.

Even simple tests which otherwise are of great diagnostic help such as the urobilinogen test become negative and, thus, misleading under terramycin treatment as has been shown for aureomycin by Watson (1950). We do not know whether the same mechanism which inhibits cell enzymes in the liver also is responsible for the repeatedly negative thymol turbidity tests which have been checked with blood specimens of other patients that gave highly positive results with the same reagents. Whatever the explanation may be, it seems that clinical observation is more reliable than laboratory findings where liver function under the influence of terramycin is concerned.

Discussion

Our first case, one of infective hepatitis of long duration, not responding to the usual treatment while showing an unexpectedly prompt response to oral aureomycin leading eventually to full recovery, resembles a case reported by Sainz (1951) and a very similar one, a young Muslim, of our own experience. But knowing how variable the course of infective hepatitis is, recovery occurring sometimes even after several months without any particular treatment, we have no definite proof that in that case the sudden change for the better actually was due to aureomycin.

The second case is different. Here we had a viral hepatitis undoubtedly showing the mental condition characteristic of beginning hepatic coma, which in our experience is of the gravest significance, so much so that none of our hepatitis patients recovered who had taken such a turn prior to the introduction of aureomycin in the treatment of infective hepatitis. Favourable results with aureomycin in coma of fulminant hepatitis have been reported in two cases by Farquhar *et al* (1950); Goldbloom *et al* (*loc. cit.*) of two similar cases lost one while the other recovered. Rizkalla (1951) during an epidemic of hepatitis in Egypt saw two cases of cholæmia recover after aureomycin.

In spite of such encouraging results aureomycin seems not to have been generally recognized as a valuable drug in the treatment of fulminant hepatitis as it is often not mentioned as part of the recommended standard treatment even in quite recent papers on this subject (Ricketts, 1953).

While dealing with the effect of terramycin alone on cholæmic coma in fulminant hepatitis, we have no previous reports for comparison.

The only comatose cases of fulminant hepatitis in whose treatment terramycin has been used at all and who recovered had been given at the same time cortisone, corticotropin and some of them also aureomycin (Ducci and Katz, 1952; Ducci, 1953); it is, therefore, impossible to say how much of the curative effect in these previous cases has been due to terramycin. In fact, the manufacturers of terramycin (Pfizer International Service Co., Inc., New York) informed us on 9-4-53, that they have no report of terramycin *alone* being successful in the treatment of hepatic coma.

Both of our cases of fully developed hepatic coma in fulminant hepatitis would have ended fatally according to all previous experience, had they been treated with glucose, insulin, penicillin, vitamin B-complex and lipotropic factors only. This conviction is supported by Ducci (*loc. cit.*) who states after having treated more than 1,000 cases of hepatitis in Chile, "recovery after coma in acute fulminant hepatitis has never occurred previously in our experience". Having seen two cases wake up from their deep coma and recover from their violent delirium, while nothing but terramycin has been added to the hitherto ineffective routine treatment, we feel justified in saying that apparently intravenous injections of terramycin have been responsible for the recovery of these two cases.

The few attempts made so far to explain the favourable effect of the so-called broad-spectrum antibiotics in infective hepatitis assumed that they acted by eliminating the bacterial flora of the intestinal tract and so prevented secondary invasion of the damaged liver (Annotation, 1952).

Our opinion that the life-saving effect of aureomycin and terramycin is based on their antiviral activity found a powerful support by experimental work with the mouse-hepatitis virus (M.H.V.) by Gledhill and Andrewes (1951), and Gledhill, Dick and Andrewes (1952). These authors made the truly sensational discovery that virus hepatitis in mice, an uniformly fatal disease, is caused by two factors, L. and S., either of which alone shows a low pathogenicity, whereas both together combine to the lethal M.H.V. The two factors can be separated by the fact that L. is susceptible to terramycin, while S. is resistant to it. As both factors are required to produce the disease it is, therefore, not surprising that terramycin or aureomycin, given upto 48 hours after an otherwise lethal dose of M.H.V., protect the injected mice and prevent them from falling ill. Although the virus of human hepatitis and that of mouse-hepatitis are not identical, the experimental evidence obtained in mice makes a direct viricidal effect of these antibiotics in man more probable.

Summary

Four cases of infective hepatitis have been treated with aureomycin orally or terramycin intravenously.

One seemed refractory to every other treetment for more than two months and responded promptly to aureomycin.

CALSIOD

tablets in the treatment of

are both effective and safe

CALSIOD

calcium ortho-iodoxybenzoate, S.K.F.—
provides symptomatic relief in many cases of arthritis where there is discomfort and only slight joint involvement. It is both an analgesic and a palliative.

CALSIOD is safe. It is not habit forming. No damage to liver or kidneys has ever been reported following its use.

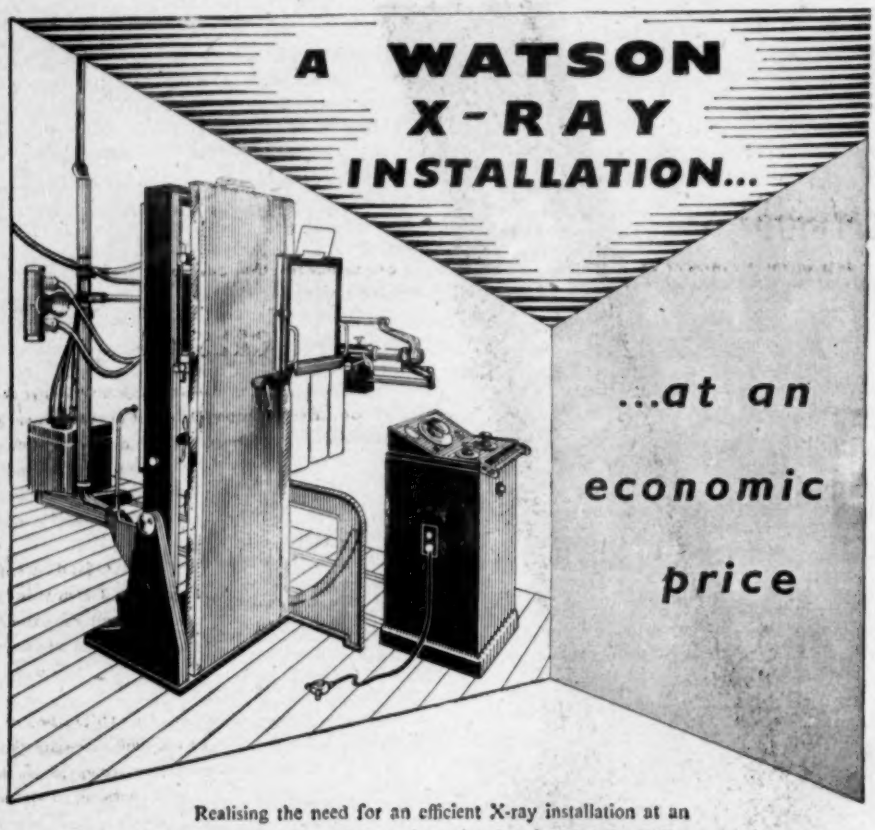
CALSIOD has a wide field of usefulness among those patients who complain of rheumatism, lumbago, gout, neuritis, etc.

Smith Kline & French International Co.

Philadelphia, U.S.A.

(Incorporated in U.S.A. with Limited Liability)

In India: 232 Homby Road, Bombay 1



Realising the need for an efficient X-ray installation at an economic price, Watsons have produced the "R 500"—"Roentgen 50" combination.

The "Roentgen 50" is a modern shockproof generator with an output adequate for the majority of radiographic procedures. It can be operated at full output even when the capacity of the available mains supply is restricted, and used in conjunction with either a stationary or rotating anode tube.

The "R 500" hand tilted table can be used in the horizontal, tilted or vertical position, with the X-ray tube either above or below. Please write for further information.

G.E.C.

THE GENERAL ELECTRIC COMPANY OF INDIA LIMITED
Magnet House, Chittaranjan Avenue, Calcutta-13
Branches at:
Bombay Madras Kanpur Delhi Bangalore Coimbatore Secunderabad
(Representing THE GENERAL ELECTRIC CO. LTD. OF ENGLAND)
Also represented in: Karachi Lahore Chittagong Rangoon.

GEC 3027

The second showed signs of beginning hepatic coma and recovered quickly when aureomycin was given orally.

Case 3 and 4 were admitted while already in deep coma from which they recovered when treated, in addition to routine therapy, with intravenous terramycin injections.

According to previous experience it seems most unlikely that the three cases of fulminant hepatitis with coma, impending or developed, had survived without the help of aureomycin or terramycin.

ACKNOWLEDGMENT

Our thanks are due to members of the Department of Pathology who carried out the laboratory examinations and to Dr. Bhagatprasad Mathur, our senior house physician, who rendered valuable help in these investigations.

REFERENCES

Annotation—*Lancet*, **2**: 1212, 1952.

DUCCI, H.—*Merck Rep.*, **62**: 21, 1953.

DUCCI, H. AND KATZ, R.—*Gastroenterol.*, **21**: 357, 1952.

FARQUHAR, J. D., STOKES, J. JR., WHITLOCK, M. C., BLUEMLE, L. W. JR., GAMBESCIA, J. M.—*Am. J. M. Sc.*, **220**: 160, 1950.

GLADHILL, A. W. AND ANDREWES, C. H.—*Brit. J. Exper. Path.*, **32**: 559, 1951.

GLADHILL, A. W., DICK, G. W. A. AND ANDREWES, C. H.—*Lancet*, **2**: 509, 1952.

GOLDBLOOM, R., STEIGMANN, F. AND POPPER, H.—*J. Lab. & Clin. Med.*, **36**: 826, 1950.

RICKETTS, W. E.—*Med. Clin. N. A.*, **37**: 125, 1953.

RIZKALLA, Y.—*J. Roy. Egypt M. A.*, **34**: 153, 1951, quoted Lederle, 15th Year of Aureomycin, p. 70.

SAINZ, P.—*Rev. Med. Cub.*, **62**: 162, 1951, quoted Lederle, 5th Year of Aureomycin, p. 69.

WATSON, C. J., see Discussion to HOLLAN, O. R.—*Gastroenterol.*, **16**: 418, 1950.

THORACOPLASTY IN PULMONARY TUBERCULOSIS

J. K. NAG, M.B., T.D.D.(WALES),
R. CHAKRAVARTY, M.B.,
S. ADHYA, M.B., T.D.D.(CAL.)

(From the Thoracic Surgical Unit of Calcutta Chest Hospital)

Since thoracoplasty for pulmonary tuberculosis was first attempted by Quinke and Spengler in 1888, it has undergone a fairly wide modification. This has taken place mostly during the past few years. It has been mainly due to immediate and remote errors observed following the use of the original technique. The evolution of the present method is fascinating and instructive in so far as the physiodynamics of respiration is concerned after the thoracoplasty. In the early part of this century the operation had been standardised as a paravertebral, multiple stage one, as advised by Sauerbruch. Anterolateral thoracoplasty was later introduced by Wells and details of this operation were published in 1927. Further improvements on the Sauerbruch type of operation have been fairly rapid. The present modified operation has an undisputed value. Although a gross surgical attack on a bacterial disease has certain objections, yet, until a specific cure for the disease is achieved, or preventive measures can wipe out tuberculosis, this will continue to remain a standard method of treatment, in selected cases.

TECHNIQUE OF THE OPERATION

Only those steps in the technique advocated by Carl Semb 1935) and adopted by us, and which differ from the Sauerbruch type of operation will be outlined.

(1) In the first stage, the whole of the first rib up to the cartilage and the bony portion of the second rib up to the cartilage are removed, only a small portion of the third rib posteriorly is removed leaving the anterior and lateral parts as support of the lung. This has been proved to minimise chance of mediastinal flutter and paradoxical movement.

(2) The ribs are disarticulated posteriorly from their vertebral junction leaving the transverse processes intact, thus preventing deformity to a great extent, especially scoliosis.

(3) Attachments between the pleural dome and the vertebræ, brachial plexus of nerves, subclavian vessels and the mediastinum (Semb's bands) are divided and the lung is stripped concentrically from all attachments by careful blunt and sharp dissection under full vision. In desired cases, this apicolysis or mobilisation of the apex has been achieved up to the level of the arch of the aorta on the left side, or the azygos vein on the right. The intercostal bundles are divided posteriorly between ligatures and allowed to fall forward on the mobilised lung. The next stage when necessary, has been done usually after two to three weeks. The apex of the thoracic cavity, called Semb's space, from where the lung has been stripped down is filled up with blood and post-operative exudation. This keeps down the apex of the lung which has a tendency to re-expand.

(4) In the second stage we had not attempted further apicolysis as advocated by some. The amount of stripping of the apex that will be necessary, has been achieved in the first stage. This we have done primarily because even after two weeks the lung gets firmly attached to the mediastinal surface where stripping is extremely difficult and sometimes very risky, as the vital structures are liable to be injured.

(5) In the second stage after necessary rib-resections bone chips from the resected ribs soaked in normal saline and spread over gelfoam are placed over the apex of the mobilized lung specially on its antero-medial part, which has a tendency to re-expand more quickly. We believe the bone chips with the regene-

rated ribs and organised exudates form a roof over the apex of the apicolysed lung and prevent its re-expansion.

Pre-Operative Preparation

One of the most dreaded complications after the operation is stagnation of sputum in the lung; and this gives rise to contralateral spread and ipsolateral atelectasis. Preoperative care and preparation can minimise it to a very great extent. It is for this unwanted retention of sputum that previously operations were best timed during the afternoon, expecting the cavities to be almost free from accumulation of secretion so many hours after the morning. In our series, before operations every case is given the training to breathe mostly by the diaphragm so that the lower part of the lung takes a very active part in breathing and any collection of sputum will be effectively coughed out. About a week's exercise can train one to breathe chiefly by the diaphragm. All other preparations are the same as in a case for any major surgical operation.

Anæsthesia

Till very recently operations had been done under general anæsthesia, but with the comparative results of local and general anæsthesia the former has been more preferable to most surgeons. The most important advantages of local anæsthesia over general are briefly the following, specially in this operation:

1. In local anæsthesia the cough reflex is not entirely cut off and that prevents stagnation of sputum, thereby preventing bronchogenic spread or atelectasis.

2. In local anæsthesia there is less chance of paradoxical breathing as the respiration is quiet and regular.

3. In local anæsthesia there is distinctly less shock due to blocking of the nerves and also due to less blood loss.

4. Infiltration of local anæsthesia in the field of operation minimises chance of bleeding.

5. The operation can be done with less hurry and no concomitant risk to the patient.

In our series of cases we used seconal sodium 3 grains, one hour before operation and 1/2 per cent xylocaine for nerve blocking, whereas, 1/4 per cent of the same was used for tissue infiltration. In some cases we had to supplement the anæthesia by intravenous morphia, varying from 1/6 to 1/4 grain. In two cases highly strong as they were, we used pentothal sodium 0·5 to 0·25 gm. intravenous. In none of the other cases we had to use a general anæsthesia like gas and oxygen.

Transfusion

As expected the average amount of blood loss in the first stage is about 450-500 c.c. Most of the cases get a transfusion of Plasmosan or a similar product. In some of our cases we had given transfusion of 300 c.c. of whole blood and we feel, whenever possible whole blood should be given as this helps quicker recovery from post-operative shock and accompanying complications.

Post-Operative Care

The patient is usually put to sleep for the whole of the night by a sedative. Wherever there is bad paradoxical breathing (it is present in a varying degree in all cases in the first stage), light sandbags are used to check movement of the operated side and oxygen is administered continuously for 12 to 24 hours. The patient is allowed sitting up the next morning and movements of the limb (passive and active) are started after 48 hours. The patient is encouraged, whenever he feels like coughing, to bring out his sputum.

Results

The period of observation in our series varies from 6 months to 2 years. Assessment of the results of thoracoplasty for pulmonary tuberculosis is very difficult, at such a short state. The result of this modified operation shown by Semb (1935), Price-Thomas and others (1943) shows success in follow-up studies over 10 years in about 85 to 90 per cent of cases.

Of the 36 cases, 6 were females and 30 males. The age group averaged about 24 years, minimum being 18 and maximum 55. Total number of operations done was 69. Number of ribs removed is as follows:

3 ribs were removed in 4 cases, 5 ribs in 23 cases, 6 ribs in 5 cases and 7 ribs in 3 cases.

In this series there had been one mortality—96 hours after the operation, patient dying of paralytic ileus and toxæmia. In all tables except the first one this case has been excluded. Cavity closure has been verified by tomographic examination and sputum examination always by culture for acid-fast bacillus. In some cases though cavity closure and sputum conversion have been achieved, they have been grouped in the stationary one because clinically they have not improved satisfactorily, radiologically the lesions remain in the same state and though there is no sign of toxæmia—exercise tolerance test has not been satisfactory. This probably proves the time-honored fact that any measure at our disposal is not perhaps the last word in the treatment of tuberculosis.

Table 1—Showing Results of Operation

Improved	*Stationary*	*Worse*	*Total*
27	8	1 Dead	36

Table 1 shows that the result of this operation *per se* and the percentage of improvement following the operation is 75 per cent which is very satisfactory, though we feel there will be some more in this group from the stationary ones with careful aftercare.

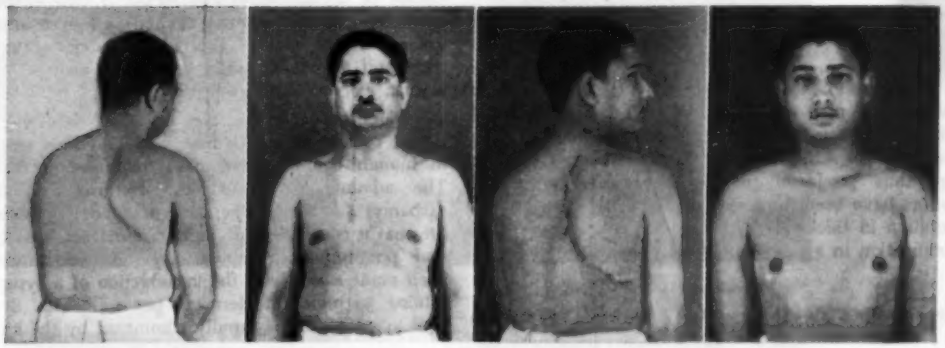


Fig. 1 Fig. 2 Fig. 3 Fig. 4

TABLE 2—SHOWING SPUTUM CONVERSION

Before operation	*After operation*		
Sputum positive	*Sputum negative*	*Sputum positive*	*No Sputum*
35	30	2	3

Table 2 shows the rate of sputum conversion which is 85·7 per cent, a very high percentage in comparison with any other measure to collapse cavities in pulmonary tuberculosis.

TABLE 3—SHOWING CAVITY CLOSURE FOLLOWING OPERATION

No. of cases with cavities	*Cavities closed after operation*	*Cavities open after operation*	*Cavities doubtful after operation*
35	31	2	2

Table 3 is almost a corollary to Table 2 and the result is placed at a firmer footing of success.

TABLE 4—EXTENT OF LESION AND RESULT OF OPERATION ON IT

Extent of one or less than one zone			*Extent upto two zones*			*Extent of more than two zones*		
Improved	*Stationary*	*Worse*	*Improved*	*Stationary*	*Worse*	*Improved*	*Stationary*	*Worse*
5 (70 per cent)	2 (30 per cent)	nil	10 (70 per cent)	4 (30 per cent)	nil	12 (84 per cent)	2 (16 per cent)	nil

The result of the operation on the extent of lesion has been tabulated and the percentage of success as seen in these cases is independent of the extent of lesion as such. It is of course taken for granted that proper indications for the operation have been followed.

DEFORMITY

This is one of the most dreaded after-effects of this fairly major operation. In fact, whenever a question of this operation is raised the first fear that the patient expresses is about the deformity. 'How much crippled I shall be'—is a question we have very often to answer to explain. Figs. 1 and 2 as also 3 and 4 show how proper postoperative care in the form of physiotherapy and breathing exercises can minimise a deformity. The most important factors at work, however are the sacrifice of minimum number and extent of ribs which can be achieved exclusively in this modified operation and the preservation of the transverse processes.

CASE REPORTS

Case 1—A. R., male, aged 24 years. History of cough with expectoration, fever, and wasting 3 months. Sputum positive for A.F.B. Skiagram shows intermediate lesion with cavitation left apex. Left A. P. attempted but failed due to pleural symphysis (Fig. 5, *vide* Plate). Condition after 2-stage operation: Semb's space filled up with exudate and air. Apex of lungs brought down to 5th rib level posteriorly (Fig. 6, *vide* Plate). Condition showing later developments: Semb's space getting smaller, exudate gradually being absorbed (Fig. 7, *vide* Plate). Six months after operation, permanent roof formed over the mobilised apex of the lung. Sputum test negative for A.F.B. Loss of vital capacity 15 per cent only (Fig. 8, *vide* Plate).

Case 2—D., male, aged 48 years. Cough with expectoration 1 year. Sputum positive for A.F.B. Skiagram shows a big cavity at the right upper zone (Fig. 9, *vide* Plate). Condition after 2-stage operation: Semb's space filled with exudate and air. Apex of lung brought down to level of 5th rib posteriorly (Fig. 10, *vide* Plate). Late result of the operation: Semb's space obliterated. Bone chips can be seen forming roof of the mobilised apex of the lung (Figs. 11 and 12, *vide* Plate). Sputum test for A.F.B. negative on culture. Patient ambulant without any toxæmic reaction only 5 months after operation.

Case 3—M. S., male, aged 35. History of hæmoptysis, fever and cough with expectoration 4 months. Skiagram shows lesion with cavitation right upper zone (Fig. 13, *vide* Plate). Sputum tested for A.F.B. positive. A. P. attempted but failed. Fig. 14 (*vide* Plate) shows condition one week after 2-stage operation. Apex brought down to the level of the 5th rib posteriorly. Fig. 15 (*vide* Plate) shows condition

following 6 months after operation. Apex mobilised to effect selective concentric collapse, sputum test for A.F.B. negative on culture examination.

Summary

Semb's modification of the classical thoracoplasty has been adopted in a series of 36 cases. Results of some of the cases have been reproduced showing selective collapse with minimum sacrifice of the thoracic cage, thus producing no deformity so to say. The authors have been impressed upon by the result of this operation in thickwalled cavities too and advocate this modification in all cases of thoracoplasty operation.

References

Price-Thomas, C.—Thoracoplasty. Modern Practice in Tuberculosis, 1952. Volume II. Published by Butterworth and Co., Ltd., Bell Yard Temple Bar, London, p. 112.

Price-Thomas, C. and Cleland, W. P.—*Brit. J. Tuberc. and Chest. Dis.*, Jan., 1943.

Semb, Carl—*Acta Chir. Scandinav.*, **76**: 761-785, 1935

Sweetman, W. R.—*J. Thoracic Surg.*, **23**: 611, 1952.

TREATMENT OF ASCARIASIS IN CHILDREN WITH HETRAZAN

P. V. KURIAN, M.B.B.S., D.T.M.,

(*Pasteur Institute of Southern India, Coonoor*)

Among the common intestinal parasites of man, the round worm, *Ascaris lumbricoides*, is the most prevalent in the Nilgiris. In the clinical laboratory of this Institute, where 500-600 specimens of fæces are examined every year, 10 to 21 per cent are found positive for ova of Ascaris. The incidence of eggs of other helminthic intestinal parasites is considerably less.

In villages and towns, where sanitary standards are low, people especially children, harbour these parasites, sometimes in large numbers. It is well known that this worm can give rise to several medical and surgical conditions by its toxic, traumatic and mechanical effects. In growing children subsisting on a poorly balanced and often inadequate diet, gross nutritional disturbances are alleged to be caused by Ascaris infestation.

The fertilised female worms produce large numbers of eggs which can survive wide changes in temperature and humidity. This is the chief reason for its wide spread. To prevent re-infection and thereby to lessen the incidence of round worm infestation, provision of good latrines with facilities for proper disposal of fæces is very essential. Till this is achieved regular and periodic deworming would appear to be the only alternative for control of the infestation.

The common drugs used for deworming are santonin and oil of chenopodium. Hexyl-resorcinol is seldom used. Santonin, though very effective, can cause fatalities especially where the small quantities required cannot be accurately weighed. Oil of chenopodium is effective against hookworm as well as roundworm, but has a pungent odour. Therefore, any new drug, efficient and acceptable as a vermifuge against roundworms, will be widely welcomed.

The observation that Hetrazan was useful in getting rid of roundworms was first made in dogs and later in human beings under mass treatment of filariasis. The advantages claimed for Hetrazan (1—diethyl carbamyl 4—methyl piperazine or diethyl carbamazine) are that it could be easily administered and that fasting and purgation are unnecessary. Administration has been made easier with the introduction of a syrup containing 30 mgm. of Hetrazan per c.c. The drug is well tolerated and is rapidly eliminated by the kidneys.

Since it was noted that Hetrazan was useful as an ascaricide, it has been tried by various workers under different dosage schedules. Oliver Gonsalez *et al* (1949) in Puerto Rico, used only 2 mgm./Kg. body weight thrice daily for one day whereas Loughlin *et al* (1950) in Haiti, after several trials, recommended 13 mgm./Kg. (single dose) on first day followed by 20 mgm./Kg. (single dose) on second and third days. Hewitt *et al* (1948) in Virgin Islands, administered 13 mgm./Kg. for four days. The experience of Colbourne (1950) in West Africa, was that 2 mgm./Kg. thrice daily for one day was inferior to the effect of oil of chenopodium in usual doses. But the same author, in 1952, using 14 mgm./Kg. daily for four days found Hetrazan to be as effective as oil of chenopodium. In Tennessee, U.S.A., Ettledorf *et al* (1950) found 6 mgm./Kg., thrice daily for seven days quite effective. Hockenga (1952) in Honduras, using a syrup gave 6 mgm./lb. body weight for four days and also double this dose without any toxic effect. Thompson (1952) in Malaya found the results highly satisfactory with 20 mgm./Kg., daily for 4-7 days. In India, Singh, *et al* (1952) noted good results with 2 mgm./Kg., administered twice daily for five days in the filaria control scheme in Orissa. They also treated thirteen children with the syrup containing Hetrazan in a dosage of 6 mgm./Kg., thrice daily for seven days, in Delhi and Nilokheri, with very satisfactory results.

In the light of these obervations it was considered desirable to assess the value of Hetrazan in different dosage schedules as an ascaricide among children in the Nilgiris. The results of these investigations are reported.

Results

Three series of children showing ova of *Ascaris lumbricoides* in their fæces were treated with Hetrazan on three different dosage schedules. Fourteen days after completion of treatment, a specimen of fæces was collected. If a smear of fæces did not show ova of Ascaris on microscopic examination, the examination was repeated on the same specimen after concentrating the eggs by floatation in a concentrated solution of

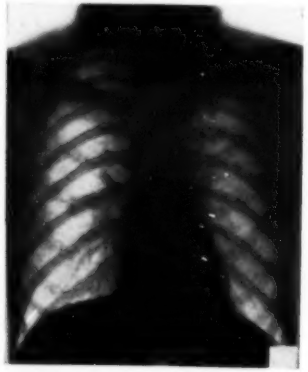


Fig. 5

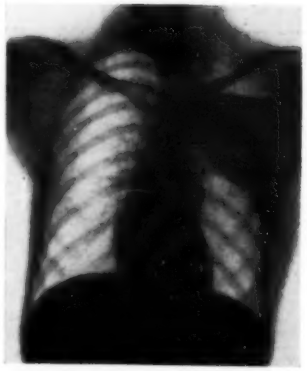


Fig. 6

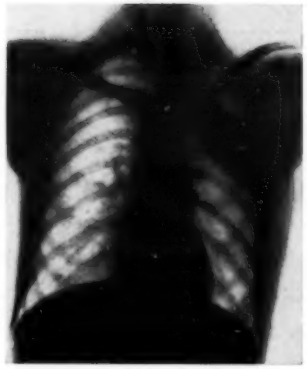


Fig. 7

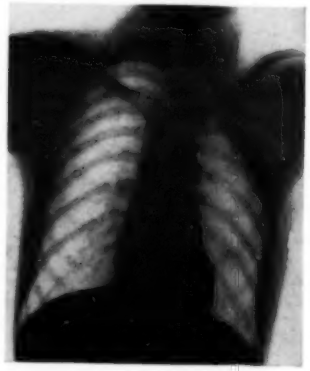


Fig. 8

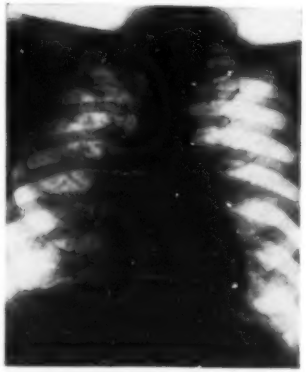


Fig. 9

Fig. 10

Fig. 11

Fig. 12

ENGRAVED & PRINTED BY REPRODUCTION SYNDICATE, CALCUTTA 6

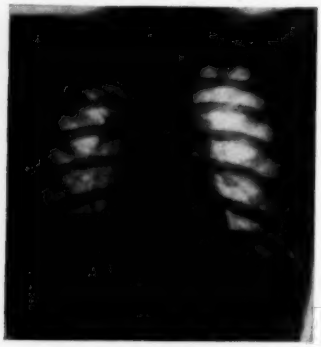


Fig. 13

Fig. 14

Fig. 15

Fig. 1—A Sympus apus.

Fig. 2—Skiagram of case in Fig. 1

common salt (Sp. gr. about 1160). If no eggs were found on concentration the specimen was repeated. A patient was considered to have passed all the worms only if no ova were found on examination on three consecutive days.

Series I—In this group of children the dose was calculated at 1 mgm./lb. of body weight to the nearest quarter tablet (1 tablet=50 mgm.) and given thrice daily (8-30 a.m., 12-30 p.m. and 4-30 p.m.) for 5 days. Every morning the child or its attendant was questioned as to the number of worms passed during the preceding 24 hours. Fourteen days after completion of treatment a clearance test was done. Among 13 children treated, no toxic reactions were found and only one did not show Ascaris ova in the fæces after 14 days.

Series II—The above dosage was doubled and continued for 7 days. In this lot one child of 2½ years complained of abdominal pain and out of six children treated only one did not show the presence of Ascaris ova in the fæces on repeated examination.

Series III—The dosage in this group was 5 mgm./lb. of body weight on first day and 9 mgm./lb. of body weight on 2nd and 3rd days. All the tablets were given soon after breakfast. The children, especially those below 6 years, had difficulty in swallowing several pills at one sitting. The result appeared to be as good as in Series II, because out of 17 children, three children did not show the presence of Ascaris ova in the stools after 14 days, even though the total quantity of Hetrazan used for each child was less than that in Series II.

Series IV—Ten children were treated with oil of chenopodium (Dose: 2 minims for every year of age with an ounce of castor oil). Nine out of ten of these children showed no Ascaris ova in their fæces fourteen days after treatment.

TABLE SHOWING EFFECT OF TREATMENT WITH HETRAZAN AND OIL OF CHENOPODIUM ON DIFFERENT SERIES OF CHILDREN

Series	*No. of children treated*	*Ages (years)*	*Weights (lb.)*	*Dosage schedule*	*Total dose mgm./lb.*	*Toxic reaction*	*No. who passed worms*	*No. negative 14 days after*
				HETRAZAN				
I	13	2-10		1 mgm./lb. thrice daily for 5 days	15 mgm./lb.	Nil	All children	1/13
II	6	2-11	28-60	2 mgm./lb. thrice daily for 7 days	42 mgm./lb.	1 child 2½ years	All children	1/6
III	17	2-7	17-43	5 mgm./lb. on 1st day single dose 9 mgm./lb. 2nd and 3rd days single dose	23 mgm./lb.	2 children nausea 2 abd. pain	All children	3/17
				OIL OF CHENOPODIUM				
IV	10	2-10		2 minims for every year of age up to 10 minims			All children	9/10

CONCLUSIONS

1. From the limited number of patients studied, it appears that oil of chenopodium is more efficient than Hetrazan under the conditions described.

2. No serious toxic manifestations were observed in the 36 children treated with Hetrazan.

3. Hetrazan has the advantage that starvation and purgation are unnecessary.

4. Hetrazan syrup will be particularly suitable for children below 5 years for whom oil of chenopodium is not recommended.

ACKNOWLEDGMENT

The author desires to express his thanks to Dr. Balasubramanian, M.B.B.S., for his help during this investigation and to Messrs. Lederle Laboratories (India), Ltd., for their generous gift of Hetrazan tablets used in this trial.

REFERENCES

CHOPRA AND CHANDLER—Anthelmintics and their uses. Bailliere, Tindall and Cox, London, 1928.

COLBOURNE, M. J.—*Lancet*, **1**: 996, 1950.

COLBOURNE, M. J.—*Tr. Roy. Soc. Trop. Med. & Hyg.*, **46**: 662, 1952.

ETTLEDORF, J. N. AND CRAWFORD, L. V.—*J.A.M.A.*, **143**: 797, 1950.

GRADWOHL, *et al*—Clinical Tropical Medicine. C. V. Mosby Company, St. Louis, 1951.

HEWITT, R. I. *et al*—*Am. J. Trop. Med.*, **30**: 443, 1950.

HOCKENGA, M. T.—*Am. J. Trop. Med. & Hyg.*, **1**: 668, 1952.

LOUGHLIN, E. H., *et al*—*Lancet*, **2**: 1197, 1951.

SINGH, JASWANT, *et al*—*Indian M. Gaz.*, **87**: 353, 1952.

THOMSON, F. A.—*Tr. Roy. Soc. Trop. Med. & Hyg.*, **46**: 679, 1952.

CHRONIC INTESTINAL AMŒBIASIS

K. R. MAHAJAN, B.SC., M.B.B.S.(PB.), F.R.F.P.S., D.T.M. & H.(LOND.),

Medical Referee, Employees' State Insurance Corporation (Ministry of Labour, Govt. of India), New Delhi

Amœbiasis intestinal is a protean disease which is prevalent in all parts of India and which presents itself in very wide and varied manifestations. The report is based on a hundred cases seen in the civilian population of the north-western districts of U.P. (Meerut, Bulandshahr, Dehra-Doon, Muradabad and Muzaffarnagar) during 1951 and 1952.

Symptomatology

The patients were between the ages of 8 and 60 years of both sexes. Pain in the abdomen and indigestion were the presenting symptoms. *Abdominal pain* was described by most of the patients as an irregular dull ache present constantly all over the abdomen without in any way altering with ingestion of food.

Indigestion had been a universal complaint. Almost all the patients were off their food and would not relish anything. Borborygmi were a marked feature and so were belching and eructation.

Low grade pyrexia was observed in 55 per cent of the cases. In them the temperature ranged between 97°F. and 99·8°F. 30 cases showed a reduction in weight of from 20 to 40 lbs. in a period of about a year. 70 per cent showed slight loss of weight, viz., from 4 to 7 lbs. Mild degrees of anæmia and palpitation were also encountered in the same patients. About half the patients showed a lower range of blood pressure, the readings usually being 90-100 m.m. Hg. systolic and 65-70 mm. Hg. diastolic. *Psychoneurotic symptoms* were frequently enccuntered in a large group of cases probably due to long suffering from this chronic malady. 25 cases presented the symptom of "burning feet syndrome".

The main symptoms encountered were—

1. Pain abdomen—94 per cent.
2. Indigestion—90 per cent.
3. Anorexia—60-70 per cent.
4. Borborygmi—60 per cent.
5. Irregular stools—60 per cent.
6. Mild pyrexia—55 per cent.
7. Lethargy—70 per cent.
8. Marked loss of weight—30 per cent.
9. Anæmia and hypotension—50 per cent.
10. Burning feet syndrome—25 per cent.
11. Palpitation—15 per cent.
12. Psychoneurotic symptoms—60 per cent.

It may be stated that the above incidence of symptoms conforms more or less to the same which I observed in another group of 600 patients, both civil and military, in Iraq and Iran during the period between 1944 and 1946.

The one constant sign of importance noticed in all patients was a palpable and thickened tender colon. While the descending colony was palpable in 88 per cent of the cases, the cæcum and the ascending colon alone were palpable and tender in 10 per cent only, and both the ascending and descending colons were palpable in 21 per cent of the patients.

Diagnosis

Diagnosis in all cases was made by stool examination after giving a laxative at bed time and examining the first stool in the morning. All were positive for cysts of *Entamœba histolytica*. Bacteriological and cultural examinations of the stools were not done due to lack of facilities for these tests at the place of treatment.

Charcot-Leyden crystals were found in 68 per cent of the specimens of the stool. 12 per cent of the cases were also found to have giardia infection as evidenced by the presence of giardia cysts besides *Ent. histolytica* cysts in their stools.

Treatment

The following course of treatment based on the clinical experience gained in the treatment of 600 cases during 1944-46, was adopted in this series:

(A) For the first three days:

(*i*) Sulphatriad tablets 2 every four hours dissolved in an ounce of water making a total of 18 gms. in three days.

(*ii*) Procaine penicillin sodium G, 400,000 units injection daily. After completion of Part A of the course Part B was begun.

(B) (*i*) 5, di-iodo-8-hydroxyquinoline (Di-iodoquin) tablets, 3 tablets twice daily after food for twenty days.

(*ii*) Emetine hydrochloride gr. i I.M. injection once daily for two days only, to begin on the same day the Di-iodoquin tablets are started.

(*iii*) Emetine-bismuth-iodide tablets gr. i (sugar coated), one tablet daily, to begin after two days interval of the last emetine injection.

(*iv*) Carbarsone tablets gr. iv (C) one thrice daily after food for the next six days.

30 per cent of the patients felt nausea 1/2—1 hour after taking the emetine-bismuth-iodide tablet but it allayed when they were asked to take gardinal-sodium tablet gr. 1/2 along with it. Four patients who had mild diarrhœa on the 6th day of emetine-bismuth-iodide administration were given pulv. creta aromaticus cum opii gr. x twice daily for the remaining period of emetine-bismuth-iodide administration and did not have any more diarrhœa. Three patients

suffered from very bad vomiting a few hours after taking emetine-bismuth-iodide and had to abandon it.

No untoward effect was noticed with any of the other drugs.

Cases who were found to suffer from giardiasis were also given mepacrine tablets 0·1 gm. each, one thrice daily for five days and the treatment begun at the same time when sulphatriad and penicillin were begun.

Clinical Progress and Follow Up

The pyrexia disappeared immediately after the sulphatriad, penicillin course and the abdominal pain and discomfort were relieved ten to twelve days after the commencement of the treatment, when the patients began to feel appetite as well, but 'wind' in the abdomen was not relieved till some time after the completion of the course of the treatment. There was a definite feeling of well being and cheerfulness in the patients as they were approaching the completion of the course.

The thickening and tenderness of the colon which was a constant sign in the beginning could not be elicited on the completion of the treatment.

Patients began to show gradual improvement in weight, and six of them put up as much as 2 stones each, within six months. Almost all cases have been followed up for a year now, and none has shown any sign of relapse so far. 60 per cent of them were checked up regularly every month by microscopic examination of their stools for six months and were always negative. About 40 per cent of the cases lived in far off places and could not come regularly for stool examination but a contact through correspondence was kept up with them and their stools examined after two or three months when they would visit the clinic. So far no patient has shown recurrence of disease either clinically or on microscopic examination of the stools.

Discussion

Ent. histolytica is primarily an endoparasite which lives and thrives in the tissues of its host and the colon is the tissue of predilection. It soon invades the bowel-wall by its lytic action and gets lodged in the submucous layer of colon within a pool of cytolised tissue and covered on top by a crust of necrotic tissue preponderant in secondary organisms. The local and generalised tissue reactions in the host are conspicuous by their absence. The *Ent. histolytica* lies encysted in this way for years in the colon and gives it the chronicity of the disease, for which tendency it is notorious. The problem of attacking the *Ent. histolytica* under such condition successfully has been engaging the attention of clinicians from time to time. Many therapeutic agents considered more or less specific in the treatment of amœbiasis, have been used. Emetine, kurchi and its alkaloids, chiniofon (yatren), di-iodoquin, vioform, carbarsone, and recently 'milibis', chloroquine, aureomycin, bacitracin, terramycin, and fumagillin (H_3) have been considered to be most useful. Druge like emetine, kurchi, vioform and carbarsone are amœbicidal but have no effect on associated bacterial or protozoal infection. Faust (1951) and Most (1950) have reported antiamœbicidal properties of bacitracin, but the drug is so far unavailable in India and it is yet much too early to say anything more about it. Aureomycin has given very promising results and is considered the drug of choice in acute amœbic dysentery by Armstrong *et al* (1950), but the relapse rate was very high. Hall has reported good results with aureomycin in both acute and chronic cases of amœbic dysentery but he too emphasises that its use in chronic cases should be supplemented with drugs like emetine or chloroquin or both. Recently, terramycin has come to the field and Bargen (1951) has reported some excellent clinical results with it. It may be of immense therapeutic value in acute cases of amœbiasis, but in two cases in the present series it did not prove efficacious in eradicating the old infection. Both cases had had 32 gm. each of terramycin alone. Two weeks after the drug was stopped both began complaining again of pain in the abdomen and 'wind'. Stools examined again, now, were found to be positive for *Ent. hystolytica* cysts, and Charcot-Leyden crystals. Very lately fumagillin or H_3 is also found to be antiamœbicidal even in the presence of bacterial infections. The consensus of opinion about chloroquine is that it is of greater value in the treatment of amœbic hepatitis rather than in chronic intestinal amœbiasis due to the fact that chloroquine is concentrated in the liver. Therefore, all these drugs when used singly by themselves are unreliable in chronic intestinal amœbiasis and do not solve the problem of relapses. Besides, the prohibitive cost of the newer available antibiotics in India make their extensive use impossible in an ordinary Indian patient. The abovementioned combined course used in the present series was found efficacious in eradicating the old amœbic infection both clinically and pathologically and at a much cheaper cost. As already stated the same course of treatment with slight modification in the dosage of diiodoquin, was adopted in the first series of 600 of my cases in Persia and Iraq in 1944-46 and found effective. Penicillin and sulphatriad are used only as an adjunct to the real amœbicidal treatment which follows them. They clear the lumen of the bowel of the secondary bacterial contents which otherwise form a crust over the ulcers along with the necrotic debris, and so make the amœbic cysts invulnerable for attack subsequently. The fact that mild pyrexia disappeared soon after this part of the treatment shows that the fever and other toxæmic symptoms encountered in these cases are not due to amœbic but solely due to secondary infection.

Comparatively larger doses of di-iodoquin for a longer period of at least 3 weeks were found necessary to be effective and check further relapses. As stated before no toxic symptoms were seen in any case with this dose and it signifies that the drug can be pushed

further for more days, but this will be an unnecessary waste. Emetine hydrochloride does not appear very effective on amœbæ in cystic form and *par excellence* controls diarrhœic symptoms in the acute attack of the disease only, and hence is used in the minimum amount of 2 grains in total in these cases.

Summary

Symptomatology in 100 cases of chronic intestinal amœbiasis is discussed and an effective combined course of treatment for it chalked out. The cases were followed for a year and no case relapsed during this period.

Acknowledgment

I am grateful to Col. Amir Chand, F.R.C.P.(E.), for his comments, and to Dr. M. Parkash, M.B.B.S., D.T.M.(CAL.), Meerut, who very kindly did the stool examinations.

References

Anderson, H. H., Johnstone, H. G., Bostick W., Chevarria, A. P., Packer, A.—*J. A. M. A.*, **140**: 1251, 1949.

Annotation—*Lancet*, **2**: 802, 1949.

Annotation—*Lancet*, **2**: 576, 1951.

Annotation—*Lancet*, **1**: 655, 1952.

Armstrong, T. G., Wilmot, A. J., Elsdon Dew, R.—*Lancet*, **2**: 10, 1950.

Bargen, J. A.—*J. A. M. A.*, **145**: 785, 1951.

Craig, C. F. and Faust, E. C.—Clinical Parasitology, Fifth Edition, Lea and Febiger, Philadelphia, p. 65, 1951.

Conan, N. J.—*Am. J. Trop. Med.*, **28**: 107, 1948.

Dennis, E. W., Berberian, D. A., Hansen, S. S.—*Am. J. Trop. Med.*, **29**: 683, 1949.

Leading Article—*Lancet*, **1**: 1163, 1951.

Most, H., Miller, J. W., Crossman, E. J.—*Am. J. Trop. Med.*, **30**: 491, 1950.

The authors seem to be extremely lucky in eradicating chronic amœbic infection in 100 per cent of their cases with one course of the scheduled treatment. Two grains of emetine hydrochloride, the dose advocated, may not be accepted universally—Ed., *J. Indian M. A.*

CONSUMPTION LEVEL OF DEPRESSED CLASSES (NONIA AND CHAMAR) IN CHAMPARAN (BIHAR)

S. B. LAL,

Nutrition Officer, Public Health Laboratory, Patna

In a previous communication (Lal, 1950), the dietary habits of the two sections of depressed classes, viz., Chairo and Dusadh have been reported. So far no records have been collected regarding the dietary habits of Nonias and Chamars. This paper deals with the diet and nutritional survey of these two classes in the district of Champaran (Bihar).

Method of Enquiry

The diet of 50 Nonia and 64 Chamar families consisting of 242 and 347 persons respectively was surveyed. The survey was done in October-December, 1949. The families belonged to the rural areas. All those surveyed were labourers and/or agriculturists by occupation.

The collection of data was according to the method already reported (Lal, *loc. cit.*). All the ingredients of food consumed were weighed in raw state. The survey lasted for 10 days.

Economic Status: The Nonia families were cultivators and labourers. Of the 50 families 33 had cultivable land varying from 11·2 acres to 0·5 acres. The Chamar families were predominantly labourers but possessed some cultivable land too. Data were collected regarding the annual produce of the land. The income was evaluated from this and from their daily wages. The produce of the land consisted mostly of rice and maize. The consumption units were worked out as suggested in the Health Bulletin No. 23 (1951).

It would appear from Table 1 that there were more mouths to feed in the Chamar families with less income as compared to the Nonia families.

Table 1—Showing Consumption Units (C.U.) and Income of Families

Class of Harijans	*Average daily income per family in annas*	*Total number of families*	*Total number of consumers*	*Total consumption units*	*Average consumption units per family*	*Daily income per consumption unit per day per family*
Nonia	16·6	50	242	201·1	4·0	4·1
Chamar	11·7	64	347	274·1	4·3	2·1

Classes of Foodstuffs Consumed: Intake per consumption-unit of the various class of foodstuffs in the two types of families is shown in Table 2. The average number of foodstuffs entering into their diet was 4 to 6. Foods such as fruits and nuts were conspicuous by their absence.

Table 2—Showing Average Daily Consumption of Foods in Ounces per Consumption Unit per Day

			Vegetables					
Class of Harijans	*Cereals*	*Pulses*	*Leafy*	*Non-leafy*	*Fats and oils*	*Flesh foods*	*Milk and milk products*	*Condiments*
Nonia	27·7	5·5	<0·05	4·6	0·2	1·7	0·3	0·3
Chamar	23·6	3·8	0·7	2·9	0·2	0·8	<0·05	0·2

Cereals—All the Nonia families were consuming raw homepounded rice while parboiled homepounded

a most efficient treatment for skin disorders

PRAGMATAR

is a very effective tar-sulfur-salicylic acid ointment which has proved its worth in skin ailments such as:

Seborrhoeic dermatitis • Psoriasis
Eczematous eruptions • Infant's cradle cap
Superficial mycoses.

PRAGMATAR is easily applied and no less easily removed

it is a most useful agent
for the skin disorders encountered in everyday practice.

Smith Kline & French, Philadelphia, U.S.A.

Sole Importers in India: Pharmed Ltd., Pharmed House,
141, Fort St., Bombay 1. P.O. Box 1185

Branches:
Calcutta—10, Lall Bazar, P.O. Box 2304
Delhi—Fountain, P.O. Box 1424
Madras—Mohan Building, 19, Govindappa Naicken Street, Madras 1
Ahmedabad—4461/3, Gandhi Rd., P.O.B. 152

In all stages of Intestinal Amœbiasis

PRESCRIBE

Entrokin

B.C.P.W. Iodochloroxyquinoline

LOW TOXICITY
HIGH THERAPEUTIC VALUE

•

Also useful in
OTHER INTESTINAL INFECTIONS
OF VARIOUS AETIOLOGY

• •
•

BENGAL CHEMICAL CALCUTTA : BOMBAY : KANPUR

FOR THE CHEMOTHERAPEUTIC TREATMENT OF

BACILLARY DYSENTERY
& INFANTILE DIARRHOEA

COLITIS, CHOLERA
AND OTHER
INTESTINAL INFECTIONS

SPECIALITIES

- LOW TOXICITY
- QUICK EFFECT
- SPECIFICITY
- SMALL DOSAGE

SULFABENZIDE

SULPHANILYLBENZAMIDE

DOSAGE

4 tablets initially followed by 2 tablets every four hours till the condition subsides. Average total dose : 30 Tablets.

PRESENTATION

Tablets each containing 0·5 gm. (7½ grs.) in bottles of 20, 100, 200, 500 and 1000

BENGAL IMMUNITY
CO., LTD. CALCUTTA 13

rice was the variety for the Chamars. Out of the total number of Nonia families 18 were found to consume only rice while the rest consumed both rice and maize. In the case of Chamars, 19 families were taking both rice and maize and the rest only rice. No other cereal entered in their dietary.

Pulses—Lentil, red gram and Khesari (Lathyrus sativus) were the pulses consumed. Khesari was consumed by all the Chamar families and only 37 Nonia families, the average consumption of which per c. u. per day in both was 2·2 ounces.

Leafy Vegetables—'Bathua sag' (Chenopodium album) was the only leafy vegetable consumed.

Non-leafy vegetables—Colocasia, ridge gourd, ladies finger and potato were consumed by Nonias. The Chamar families were consuming brinjal, bottle gourd and potato. The vegetables were mostly home-grown.

Oils and fats—Mustard oil was the fat for all. It was used for cooking purposes.

Milk and milk products—Cow's milk was consumed by the families.

No relation was observed between income and the intake of either milk or flesh foods. Milk was consumed raw or in the form of curd.

Milk, milk products, and leafy vegetables can be considered as "protective foods". The intake shown in Table 2 does not give a satisfactory idea of the trend of consumption. The same is true of flesh foods too. Table 3 shows the families not taking these foodstuffs.

TABLE 3—SHOWING FREQUENCY DISTRIBUTION OF THE NUMBER OF FAMILIES NOT CONSUMING "PROTECTIVE FOODS" AND FLESH FOODS

Class of families	*Leafy vegetables*	*Milk and milk products*	*Flesh foods*
Nonia	49 (98·0 per cent)	42 (84·0 per cent)	1 (2·0 per cent)
Chamar	22 (34·4 per cent)	63 (98·4 per cent)	2 (3·1 per cent)

The figures in Table 3 are illuminating; of the Nonia families only one was consuming 0·8 ounces of leafy vegetables per c.u./day. In the case of Chamars only one family was found to take milk in the quantity of 0·35 ounces/c.u./day. One family amongst Nonias was not consuming any flesh food but was found to take 1·05 ounces of milk/c.u./day; while in the case of Chamars, out of the two families abstaining from flesh food, one was found to consume 0·42 ounces/c.u./day of leafy vegetables and the other 0·35 ounces/c.u./day of milk.

As would appear from Table 2, the consumption of cereals and pulses in both the groups was adequate but the other food ingredients were far short of the suggested India standard (1944).

PROXIMATE PRINCIPLES: The food articles were weighed in raw state. The nutrients present in each of them were calculated as stated earlier (Lal, *loc cit.*). Table 4 shows the intake.

TABLE 4—SHOWING INTAKE OF NUTRIENTS/C.U./DAY

Class of Families	*Protein/gm.*	*Fat/gm.*	*Carbohydrate/gm.*	*Calcium/gm*	*Phosphorus/gm.*	*Vitamin A (I.U.)*	*Vitamin B_1/mgm.*	*Calories*
Nonia	119·2	16·4	716·0	0·4	2·2	585	2·2	3500
Chamar	92·4	12·3	591·2	0·3	2·4	555	2·1	2865

Protein—The protein consumed by the families was mostly from vegetable sources. The Nutrition Advisory Committee (1944) recommends 82 gm. of protein as the minimum daily requirement, of which it suggests that 29 gm. should be of animal origin. In the families surveyed, the total intake of protein was adequate but the figure for animal protein in the Nonia and Chamar families was 9·3 gm. and 4·5 gm. respectively, much less than the suggested standard.

The intake of calcium and vitamin A was far below the suggested standard (Rep. Nutrition Advisory Committee, 1944).

Calories—The average consumption of calories in both groups was adequate considering the type of work they were doing.

Frequency distribution of calories intake (Table 5) showed that the maximum number of Nonia families were consuming between 3000-4000 calories per c.u./day while in the case of Chamar families the figures were between 2500-3000.

TABLE 5—SHOWING PERCENTAGE FREQUENCY DISTRIBUTION OF CALORIES PER C.U./DAY

Class of Families	*Over 2000*	*Over 2500*	*Over 3000*	*Over 3500*	*Over 4000*
Nonia	0·0	12·0	40·0	32·0	16·0
Chamar	18·7	39·2	35·9	6·2	0·0

None of the Nonia families were consuming less than 2500 calories and amongst the Chamars consumption was always below 3500 calories. The actual minimum calorie consumption figures for Nonia and Chamar families were 2578 and 2111 respectively.

HEIGHT AND WEIGHT OF CHILDREN: The height and weight of the children of the two groups were recorded, the former in inches and the latter in pounds. Table 6 gives the figures for the two groups.

TABLE 6—SHOWING HEIGHT IN INCHES AND WEIGHT IN POUNDS OF THE CHILDREN EXAMINED

Age Group	BOYS Nonia Total No.	BOYS Nonia Av. Ht.	BOYS Chamar Total No.	BOYS Chamar Av. Ht.	GIRLS Nonia Total No.	GIRLS Nonia Av. Ht.	GIRLS Chamar Total No.	GIRLS Chamar Av. Ht.	BOYS Weight in lbs. Nonia	BOYS Weight in lbs. Chamar	GIRLS Weight in lbs. Nonia	GIRLS Weight in lbs. Chamar
2	5	30·3	7	29·8	7	30·1	7	29·6	20·1	20·7	19·8	19·3
3	10	31·1	7	31·6	10	31·5	8	32·0	23·0	23·3	21·1	21·4
4	12	33·0	9	33·5	9	32·7	8	32·6	24·8	26·1	25·0	25·7
5	13	34·2	12	34·8	12	35·6	9	35·1	28·1	27·0	26·0	27·0
6	19	36·4	16	36·0	14	36·4	13	36·4	33·0	31·1	28·3	28·0
7	23	38·8	22	38·3	16	37·1	17	37·6	37·9	37·0	31·9	33·2
8	24	40·6	19	41·9	15	40·2	14	41·1	40·0	41·3	35·0	36·5
9	16	44·9	17	44·4	16	42·6	17	42·2	45·5	45·3	40·9	41·4
10	22	45·3	18	45·7	15	44·3	15	45·0	47·9	49·4	46·0	47·1
11	19	47·8	17	48·2	14	48·5	12	48·9	56·1	56·6	54·8	54·0
12	22	51·8	20	51·5	9	50·1	8	50·4	65·0	64·1	63	62·1
13	15	53·1	15	53·8	6	52·8	5	53·4	70·3	74·4	69·6	68·5
14	14	56·1	12	55·5	2	54·0	4	54·5	82·6	81·1	79·2	81·0
Total	214	—	191	—	145	—	137	—	—	—	—	—

It would be observed from Table 6 that there was little difference in the two readings between the children of the two sets of Harijans.

CLINICAL EXAMINATION: All the children were examined and their nutritional status assessed according to method suggested by the Indian Research Fund Association (1948). The children were graded into the various grades according to the same technique. Table 7 gives the result.

TABLE 7—SHOWING PERCENTAGE OF CHILDREN IN VARIOUS GRADES

Grades	Nonia Boys	Chamar Boys	Nonia Girls	Chamar Girls
0	18·6	17·2	11·1	15·3
1	42·7	49·7	50·3	43·7
2	25·2	23·1	29·6	33·5
3	13·5	9·9	8·9	7·3

The grading of Chairo and Dusadh children (Lal, *loc. cit.*) was done by the technique of Mitra (1940) though the medical officer in both the cases has not been the same. If grade 3 is taken as "poor", it would be observed that as compared to those of the previous survey, the number of children is more in 'good' or '0' and less in 'poor' or '3)'.

All the children were further examined for signs of diseases which are supposed to be associated with efficiency of one or more nutrients. The incidence of some of the major defects supposed to be associated with deficient intake in quality is given in Table 8.

TABLE 8—SHOWING PERCENTAGE INCIDENCE OF NUTRITIONAL DEFECTS BY SEXES

Class of Harijans	Sex	Xeroph-thalmia	Phryno-derma	Angular Stoma-titis	Bitot's Spot	Calories
Nonia	Boys	6·5	2·8	6·5	0·4	6·0
	Girls	6·2	2·1	6·2	0·7	8·2
Chamar	Boys	5·2	2·6	6·8	0·5	4·7
	Girls	4·3	1·4	5·1	nil	7·3

CONCLUSION

The income of the Nonia families was more with less mouths to feed as compared with those of the Chamar. The consumption of cereals and pulses exceeded the suggested Indian standard. Except a few families in both the groups all were found to consume flesh foods. Intake of all foods except cereals and pulses was very low. Of the nutrients, low intake was observed in the case of calcium and vitamin A only. There was little difference observed in the two groups so far as the nutritional status and anthropometric measurements of the children were concerned and this was natural too since the consumption level of both was nearly the same.

The level of the intake of the Chario and Dusadh families (Lal, *loc. cit.*), was much less as compared to those in the present survey. Age for age the children were shorter in height and lighter in weight and a large percentage of children was ill-nourished.

SUMMARY

1. Diet survey of 50 Nonia and 64 Chamar (subclasses of Harijans) families in Champaran (Bihar) was carried out in October-December 1949.

2. All the Nonia families were consuming more than 2500 calories; while 18·7 per cent of Chamar families had an intake below this level. Unlike those of the Nonia, none of the Chamar families were consuming over 4000 calories.

3. Consumption of 'protective foods' was low; only one Chamar family was consuming milk and one Nonia family was found to take leafy vegetables.

4. Consumption of proximate principles was adequate except for fat, calcium and vitamin A.

5. Compared to the intake of Chairo and Dusadh, families the intake of Nonia and Chamar families was better both in quality and quantity.

6. The diet though reaching the target of calories, in most other respects was unbalanced.

REFERENCES

Health Bulletin, No. 23, 1951—Govt. of India Press, Simla.

LAL, S. B.—*Indian J. M. Research*, **38**: 131, 1950.

MITRA, K.—*Ibid*, **27**: 887, 1940.

Report of the Sub-Committee of Nutritional Requirements, Nutrition Advisory Committee, I.R.F.A., 1944.

Report of the Scientific Advisory Board, I.R.F.A., 1948, p. 74.

PRACTITIONERS' CORNER

MEDICAL TREATMENT OF CASES OF ENLARGED PROSTATE

C. H. PRIMLANI, F.R.C.S.,

Hony. Surgeon, Victoria Hospital, Ajmer

A few people are averse to surgical treatment while some others come to us in an advanced stage suffering from cystitis, nephritis and pyelonephritis. In addition to the above there are some who suffer from some intercurrent disease like myocarditis, chronic asthma or some other debilitating disease and are bad surgical risks. Such people are compelled to lead a catheter life with its attendant dangers of cystitis and pyelonephritis. For all the above cases I have followed the medical line of treatment for the last fifteen years with great success and much relief to the suffering patients.

As we are chiefly concerned here with the benign enlargement of the prostate of advanced age something may be said about its ætiology before the medical treatment is outlined.

As it generally occurs after 50, it is considered to be due to involution of the genital organs, just as changes are found in the female breasts at the monopause. Usually 70 per cent of old people are free from the symptoms of enlarged prostate hence the above factor cannot be the sole cause. In this connection it will be interesting to mention that this complaint is very rare amongst Mongolians.

Arteriosclerotic changes in the entire urinary apparatus is held by Gnyon and others to be the cause, but this view does not hold much ground.

Zuckerman and Parks carried out several experiments in male monkeys and it has been considered by many others that endocrine imbalance at this age is the cause of this enlargement. It has long been known that the accessory sexual gland is castrogenic. In old age the balance between the androgens and castrogenic hormones is disturbed with the result that androgens decrease and castrogenic hormones increase, bringing about the hypertrophy of the glands. This theory also does not completely satisfy us as several people of 80 and 90 years of age never show any signs of enlargement of the prostate.

Sexual excess or chastity have been cited as cause but there is no evidence to support this theory. Occupation, diet and sedentary life have also no bearing on this complaint.

Looking into all the above factors one comes to the conclusion that no single cause can account for all enlargements of the prostate.

The average weight of the prostate is about four and a half drachms and when enlarged it usually weighs between 2 to 3 ounces. I have removed prostates weighing fourteen ounces and the largest known has been 24 ounces. Most of the enlargement takes place above the ejaculatory duct in the verumontanum and is chiefly confined to the posterior part. That is why we find in some cases only the enlargement of the middle lobe which projects into the bladder and produces the worst symptoms. I have found that in such cases rectal examination alone gives us no clue of the enlargement. The cystoscope is of special use in these cases. Secondary changes take place in the urinary organs as a result of the enlarged prostate of which the most important are the prostatic pouch containing the residual urine, distension of the bladder with the production of diverticuli and its atony. Cystitis is often a complication of enlarged prostate. Stone in the bladder is not an infrequent finding. Backward pressure on the kidneys leads to nephritis, pyelitis and pyelonephritis when there is infection.

Amongst the most important symptoms is the frequent micturition specially in the night. It becomes more and more difficult as the disease progresses, and ultimately it becomes very distressing. When the kidneys show signs of backward pressure there may be headache, thirst, loss of appetite, polyuria, general malaise, etc. Constant straining may lead to hæmorrhoids and inguinal hernia.

TREATMENT

Treatment falls under two heads—

1. Dealing with the prostatic enlargement, and
2. Treating of the complications.

Treatment of the disease proper—For the first, acting on the hormone theory, testosterone or perandren injection 10 mgm. may be given three times a week. It may be given for 2 or 3 months. I know of some cases who obtained relief from symptoms for 4 or 5 years. Vasectomy also gives relief in some cases. If these measures fail I use the injection treatment which succeeds. The following solution is used for injection into the prostate:

Acid acetic glacial—8 grains, acid carbolic—8 grains, acid citric—8 grains, glycerine—20 minims, anathaine—2 grains and distilled water upto one ounce.

With a needle about five inches long one c.c. of the above solution is deposited in each lobe of the prostate. The patient is then allowed to walk to his bed. This is repeated after a week, different sites being chosen each time, 3 to 5 such injections may be required. The patients then sleep better, appetite improves and their whole general outlook of life becomes more cheerful. I have removed some prostates after the injections and found that each injection produced an area of necrosis 1/4 to 1/2 inch in diameter, which ultimately leads to shrinkage of the prostate.

Treatment of complications—Suprapubic drainage carried out under local anæsthesia does a lot in overcoming sepsis and giving immediate relief. Irrigation of silver nitrate 1 in 15,000 may be given every day.

In cystitis, B. coli group and other bacteria like proteus, staphylococcus and streptococcus are usually found. Aureomycin and penicillin may, therefore, be used with great advantage in combating this infection. Uræmia is a serious condition which requires to be carefully watched and treated. There are various tests for estimating the function of the kidneys. The most accurate of all is phenolsulphonthalein test. 6 mgm. of the dye mixed with 2 c.c. of distilled water is given intravenously. In normal persons about 80 per cent of the dye is excreted in the urine by the end of the second hour. If the excretion is less than 20 per cent it means a serious damage to the kidneys.

It is considered advisable to have urea concentration and blood urea tests done side by side. As all the three tests combined impart very useful information about the condition of the kidneys. If the urea excretion in the urine is below 2 per cent the function of the kidneys may be considered impaired, below 1 per cent as bad. When the blood urea is 40 mgm. per 100 c.c. the kidney function is impaired. Over 100 mgm. means a serious damage of the kidneys, and no operation should be undertaken with such damage to the kidneys. A patient with severe uræmia should be given strong diuretics.

Diuretin grains 10 are given every 4 hours or sodium acetate grains 20 every three hours. The patient is encouraged to take large quantities of water—5 or 6 pints a day. In very serious cases continuous intravenous saline by drip method is advised or better still 2½ per cent glucose sol. Intravenous 4 per cent solution of sodium sulphate also acts as a very good diuretic. Turpentine stupes may be applied to the abdomen. In desperate cases intraperitoneal lavage may be given or nephrotomy performed and the kidney drained. There is generally a very free flow of urine after this operation. Artificial kidney may be employed if available. It succeeds when all other methods have failed.

Case Reports

Case 1—A man aged 63 came with complete stoppage of urine. He was a chronic asthmatic. His blood pressure was 180 and 100 mm. Hg. and he had paresis of both the legs for a few years. He was kept on catheter only for the first two days. After the first prostatic injection he could pass urine. The frequency diminished and he could sleep much better. He was given four injections and was discharged after five weeks as cured. He never had any urine trouble all the rest of his life and he died from pneumonia after 8 years.

Case 2—A man aged 72 called me when he had complete stoppage of urine. His blood pressure was 200 and 130 mm. Hg. Blood urea was 120 mgm. per cent. Urea excretion in the urine was found to be 1·5 per cent. His general condition was not too good. He was given suprapubic drainage and received two prostatic injections. He was also kept on Perandren injections. After three weeks he could pass the urine by himself. Perandren injections were continued for two months more. He is now 78 and has had no urine difficulty up to the present day.

Case 3—A stout man aged 62 weighing 220 lbs. came with frequency of urine every 10 minutes. His blood pressure was 220 and 120 mm. Hg. Blood urea was 100 mgm. per cent. After a few days treatment his blood urea came down to 50 mgm. per cent. One surgeon who wanted to remove his prostate gave him spinal anæsthesia. He immediately collapsed, his blood pressure having fallen to 110 and 85 mm. Hg. After ephedrine and some stimulants he revived and was sent back to bed. A few days after he was put on prostatic injection treatment. He left the hospital after one month stating that 60 per cent of the urine trouble had been relieved. He was not seen again.

Case 4—A man aged 66 came with prostatic trouble. He was bedridden and suffered from myocarditis. His blood pressure was 110 and 85 mm. Hg. Blood urea was 110 mgm. per cent. He was given prostatic injections. After receiving 4 injections, frequency of micturition had much diminished, his appetite had improved and he was able to move about. He left the hospital after six weeks much relieved of his urine trouble.

Something might be said here about the malignant disease of the prostate. Sarcoma is rare and occurs in children. Cancer is fairly common in old age. The medical treatment of cancer in this region has given us fairly encouraging results. After castration the tumour decreases and there is even retrogression in the metastatic growths in the bones and other places. The administration of stilboesterol gives equally good results and should always be given a trial. By these means there is improvement in the symptoms and life becomes prolonged and more bearable. For the pain of secondary deposits deep x-ray therapy has been found to be very useful. In cancer of the prostate, the highest concentration of acid phosphatase is found in the blood. The success of the œstrogenic treatment can be well estimated by the decrease of acid phosphatase in the blood, and also the decrease in the sedimentation rate. This test can be made use of in diagnosing early cases of cancer of the prostate. Above 3·5 K.A. units will be suggestive of malignancy.

SPECIAL ARTICLE

RENAL FACTORS IN ŒDEMA

HIMANSU S. CHAKRAVARTI, M.D.(CAL.),
School of Tropical Medicine, Calcutta
Clinical Research Unit, I.C.M.R.

The fundamental validity of Starling's concept regarding the occurrence of œdema has never been totally refuted. According to this widely accepted theory, the important physicochemical factors concerned are (i) diminished oncotic pressure of the plasma due to hypoalbuminæmia, (ii) increased hydrostatic pressure in the capillary bed, (iii) increased capillary permeability. Almost all the clinical conditions of excessive extracellular fluid collection can be explained by one or a combination of these factors. However, from time to time this theory was found inadequate in explaining the various phenomena encountered in clinical and experimental œdema. For example, one of the potent arguments against this theory is that along with the accumulation of fluid in the interstitial space, there is increase in the plasma volume in cardiac, renal and nutritional œdema. This is contrary to what would be theoretically expected if fluid were driven out from vascular tree in the tissue space either due to hypoproteinæmia or due to increased hydrostatic pressure in the capillary. Moreover, in most œdematous states, except in the inflammatory variety the fluid in the interstitial space resembles the ultra filtrate of plasma, which is contrary to the possibility of increased capillary permeability.

Kidney being the chief effector organ in the regulation of the volume and composition of the extracellular fluid compartment, increasing interest has been rightly focussed on the role of this organ in œdema. Advent of refined techniques for quantitative estimation of distribution and excretion of salt and water has provided impetus in this direction. In the last decade or so quite an impressive volume of literature which lays emphasis on the kidneys has accumulated.

Salt and water are retained in the body in nearly isotonic proportion in the œdematous states. The newer hypotheses are based on the possibility of retention of either salt or water or both, by the kidney. The dexterity with which the kidney is thought to handle salt and water in health and disease has been authoritatively discussed by Homer W. Smith.

Basic Physiological Considerations

Filtration-reabsorption theory of urine formation is the one universally accepted. Urine is formed at the glomerulus as a protein free ultra-filtrate of the plasma. Direct analysis of the glomerular filtrate by micropuncture corroborates this fact. About 120 ml. of plasma is thus filtered every minute in an average person with a body surface area of 1·73 sq. M. This enormous volume of fluid during its passage through the renal tubules is treated in such a way as to be altered completely in quantity and quality before it is finally delivered as urine. The selective way in which kidney treats the individual items of the plasma constituents indicates the working efficiency of this intricate organ and the detailed exposition of the *modus operandi* awaits revelation in the future.

From 170 L. of glomerular filtrate in 24 hours only about 1·5 L. of urine is formed. And at a plasma sodium concentration of 140 meq/L, disregarding Donnan's effect about 17 meq per minute will be filtered by the glomeruli. Of this, only about 0·5 meq per minute or 500 meq a day is finally excreted in the urine. Broadly speaking about 99 per cent of both sodium and water filtered, is reabsorbed by the tubule.

Reabsorption process differs greatly in the proximal and the distal segments of the tubule. In the proximal segment sodium with its accompanying anions is actively reabsorbed by the cells. This fraction involves about 4/5ths of the filtered load. Along with the active reabsorption of sodium (and other osmotically active substances like glucose, urea, etc.) in the proximal tubule, 7/8ths of the water of the glomerular filtrate is supposed to be passively reabsorbed by the process of diffusion resulting from the difference in osmotic gradients between tubular urine and blood. (Reabsorption of sodium, glucose, etc., leaves a hypotonic urine in the tubule which helps water to diffuse back into the blood). The remaining one-fifth of sodium and one-eighth of the water is delivered to the distal segment for final operation through the thin loop of Henley which helps equilibrating the proximal urine to be isotonic with the plasma.

In the distal segment, reabsorption of sodium from the isotonic urine is limited by the maximum capacity of the cells (T^t Na). If the quantity delivered to the distal segment is less (than T^t Na) it will be completely reabsorbed and no sodium will be excreted in the urine. This happens normally when sodium is withdrawn from the diet for a long time. On the other hand, if sodium load to the distal tubule exceeds maximum reabsorptive capacity, the residual fraction of sodium will be spilled over in the urine. By this process the kidney maintains a fairly steady concentration of plasma sodium, in spite of varied intake of salt. The distal segment thus acts as a fine regulator for the retention or excretion of sodium and there are reasons to believe that this process is susceptible to humoral control, (adrenocortical steroids, sex hormones and antidiuretic hormone ADH). According to this prevailing view it is apparent that variation in sodium excretion depends on the rate of glomerular filtration and on the plasma sodium concentration. Other factors which have been less conclusively proved but under constant vigilance of the workers in this field are overactivity of sympathetic nervous system, rise in renal vencus pressure, changes in blood pH and CO_2 tension

as in hyperventilation and base exchange mechanism in the distal tubule (Pitts, 1948).

Besides passive diffusion of water along with sodium, reabsorption by the distal tubule of a small bulk of water is under active control of the antidiuretic hormone of the neurohypophysis (ADH). Reabsorption of sodium in the distal tubule leaves a hypotonic urine which is acted upon by ADH causing active reabsorption of water by the distal tubule. In this way isotonic or hypertonic urine is formed. In the absence of ADH the hypotonic urine is excreted without any further change.

In short, reabsorption of sodium involves two separate operations—(i) Proximal process which causes reabsorption of a constant portion of sodium load presented to it by glomerulus; (ii) A distal process which reabsorbs sodium that is delivered to it, until the urine is sodium free or the distal reabsorptive capacity is exceeded. The distal process is conditioned by (a) changes in the distal load of sodium effected by changes in the rate of filtration—a decreased filtration rate resulting in more complete reabsorption; (b) changes in the humoral control. Likewise, reabsorption of water also occurs in two stages: (a) Obligatory reabsorption of water in the proximal tubule and a part in the distal tubule; (b) active reabsorption of water under control of ADH.

On the basis of the above hypothesis of Homer Smith and his associates, increased sodium reabsorption by the kidney may be mediated by (i) diminished GFR (glomerular filtration rate) without any hindrance of tubular reabsorptive capacity (glomerulotubular function dissociation); (ii) increased absorption of sodium due to excess of salt-active hormone or due to increased sensitivity of the tubule to normally circulating hormones. This theory does not envisage any variability of the proximal tubular function except the limitation imposed on it when sodium concentration gradient is developed between the plasma and the tubular urine; or when there is an impediment of tubular reabsorption of water due to presence of excessive osmotically active substances as in osmotic diuresis. Maximum limiting value of the reabsorptive capacity of the tubule has been subjected to criticism by Black *et al* (1950) who found that after a period of low sodium diet if sodium load is artificially increased by injection of hypertonic saline, excretion of sodium fell far below the normal level indicating increased reabsorptive capacity of the tubule. However, such preliminary treatment with low sodium diet may in itself disturb the fine balance of humoral control. Moreover, the diurnal variation in sodium output without much change in filtration rate baffles the exponent of this theory (Sirota *et al*, 1950). Limitation of the above theory has been admitted even by its authors (Wesson *et al*, 1948). But without going into details this may be taken now as working hypothesis on the basis of which are constructed various theories of increased reabsorption of salt and water by kidney in diseased condition.

A. Sodium Retention in Œdema

Excessive intake of sodium does not cause any significant retention if the function of the kidney is normal. Too much intake *per os* beyond the excretory capacity of the kidney is usually rejected by the alimentary canal and even the direct route of intravenous administration of a reasonable quantity will not cause generalised œdema in a person with unimpaired renal function. Any cause of sodium retention should logically therefore be attributed to defective elimination. It is however interesting to note that renal disease *per se* hardly causes any sodium retention. Even in the late stage of glomerulonephritis, in spite of marked retention of urea and other waste products, sodium retention in the plasma is unknown. In clinical cases of sodium excess usually the controlling mechanism of kidney which regulates sodium problem is at fault.

(1) *In Cardiac Œdema*—The controversy over the backward and forward theory of congestive cardiac failure has been the most fascinating subject for debate in the last decade. Sequence of events in congestive cardiac failure has never been universally accepted. But renewed interest in the subject came with the observation of Starr and his associates that (i) in mechanical heart model, venous pressure did not increase unless there is increase in the blood volume: (ii) after death from cardiac failure the residual pressure in the vascular tree is much higher than such pressure as found in a person dying from other causes indicating increased blood volume and venoconstriction: (iii) after electrically induced damage of the right ventricle in the dog there was no rise in venous pressure with incipient right ventricle failure (Starr and Rowson, 1940; Starr, 1949).

At the same time Schroeder (1941) found out that in congestive cardiac failure there was defective excretion of sodium chloride and beneficial effect of mercurial diuretic was due to its effect on salt excretion (Futcher and Schroeder, 1942). Warren and Stead (1944) administered sodium chloride in two patients with impending congestive failure and found that increase in body weight preceded the rise in venous pressure. These observations led to the belief that there might be retention of salt in congestive cardiac failure with expansion of extracellular fluid and blood volume.

Merrill (1946) presented evidences that in chronic congestive failure the filtration rate and renal blood flow were markedly diminished (GFR being more reduced) and he put forward the theory that this might lead to complete absorption of sodium filtered, with excessive sodium retention and œdema. Merrill and Cargill (1948) also observed that the critical filtration rate when the sodium is completely reabsorbed was

about 70 to 80 ml. per minute. Reduction of renal blood supply is disproportionate to the reduction of cardiac output which has been found to be definitely lower in this condition (Stead *et al*, 1948). Output during failure is markedly lower with physical exercise (Hickam and Cargill, 1948) and GFR which is lower during exercise even in normal subjects, is reduced heavily in cardiac cases.

Sequence of events according to advocates of the forward failure theory, the number of which has enormously swelled in recent years, is as follows:

Myocardial weakness leads to diminished cardiac output which is exaggerated during exercise—diminished cardiac output leads to diminished renal blood flow and filtration rate. Such reduction is also exaggerated disproportionately during exercise. Low filtration rate leads to glomerulotubular function dissociation causing complete or excessive reabsorption of sodium and since water is invariably retained in the body, proportionate to the sodium ion, there is marked increase in the blood volume and extracellular fluid, resulting in rise in venous pressure and œdema. The following authors may be cited by way of reference; Starr, 1949; Stead, 1949; Bradley and Blake, 1949; Richards, 1949.

In high cardiac output type of failure the theory of increased metabolic requirement has been evoked to explain precipitation of cardiac insufficiency in persons with antecedent high cardiac output. However, it must be admitted that assessment of increased metabolic requirement is difficult with our present day techniques.

Since the publication of Merrill *et al*, renal ischæmia has been confirmed by scores of others in congestive cardiac failure (Mokotoff and Ross, 1948; Aas and Blegen ,1949; Edelman *et al*, 1950). But the exact mechanism by which such reduction is mediated is still obscure. Merrill *et al* (1946) suggested excessive renin while Edelman *et al* (1950) have thought it to be due to large amount of VEM (vasoexcitor material) circulating in such cases. The above theory has been put to severe test by others and mention may be made of Kattus *et al* (1940), Threefoot *et al* (1947), Davis and Shock (1949). The cause of increased venous pressure in forward failure theory is due to increase in circulating blood volume (Davis and Smith, 1947; Gibson and Evans, 1937; Meneely and Kaltreider, 1943). But even this observation has not gone unchallenged (Peter, 1948). Increased pressure in the renal vein has also been found to cause excessive sodium reabsorption (Winton, 1937; Bradley and Bradley, 1947; Blake *et al*, 1949) but this cause does not seem at present to be of much importance. Similarly, increased sympathetic activity is also found not tangible in explaining salt retention.

Endocrinal factors—In congestive failure conclusive evidences for endocrinal imbalance inaugurating salt retention are rather lacking although the possibility of such factors has been unequivocally admitted. Increased excretion of corticoid (Parrish, 1949) and DOCA like substances (Deming and Leuttsher, 1950) in the urine of congestive failure cases have been reported. Merrill (1949) demonstrated low sodium concentration in the sweat of his several patients. White *et al* (1950) reported low salivary sodium and increased potassium. Elliott (1950) found low count in the circulating eosinophils. All these observations, though the tests are far too crude for measuring adrenocortical activity, indicate some hyperfunction of adrenal cortex. On the contrary Lasche *et al* (1951) found low urinary 11-oxysteroid and 17-ketosteroid in majority of their cases. Reynolds (1952) found no evidence of increased electrolyte-hormone activity from the study of sweat sodium. According to Reinhardt (1951) in nephrectomised rat it was found that hypoadrenalism facilities, œdema formation. The problem of co-relating adrenal hyperactivity with salt retention is still more complicated from the clinical observation of improvement reported in cardiac œdema under ACTH or Cortisone therapy (Massell and Watten, 1950; Sprague *et al*, 1950).

2. *In Cirrhosis Liver*—Œdema and ascites in cirrhosis were attributed to the presence of hypoproteinæmia and portal hypertension. Lately it has been suggested that the fluid retention may be a direct renal response to antidiuretic substances due to faulty liver function. However, that salt retention in cirrhosis is a cause and not an effect, is difficult to establish because of the fact that this disease has a widespread physiological effect and the planning of experiment to evaluate this single point is not always feasible.

Incentive in this field began with the observation of Farnsworth and Krakusin (1948) who reported defective elimination of salt in two of their cases and also found that urinary sodium and chloride ratio was even more sharply reduced than in the cardiac group of cases. Concurrenty similar observations were recorded by Eisenmenger *et al* (1949); Faloon *et al* (1949), Goodyear *et al* (1950); Ricket *et al* (1951) and others, and accordingly palatable salt-poor and high protein diet has been tried with beneficial effect in the management of cirrhosis and œdema with ascites to avoid repeated paracentesis (Chalmers and Davidson, 1949; Philips and Philips, 1951).

Unlike cardiac œdema, meagre data is available regarding the renal hæmodynamics and its effect on salt retention in cirrhosis. Farnsworth and Krakusin (*loc. cit.*), Goodyear *et al* (*loc. cit.*) and others found that renal clearances of mannitol and PAH were defective and it has been suggested that defective excretion of salt is possibly due to increased tubular reabsorption. In a detailed study of kidney function by Stephen, Johnston and Ralli (1951) in different stages of the disease it was noted that renal plasma flow, filtration rate and TmPAH were reduced during the active phase of fluid accumulation which however returned to normal with cessation of need for further paracentesis.

Besides the possible changes in renal hæmodynamics reported above, other important pointers for sodium retention are increased activity of salt-active hormones. Abundant literature on the subject indicates that liver inactivates sex hormones and possibly adrenal steroid and this inactivation may be in abeyance in cirrhosis and other hepatic involvement. Reference may be made to the extensive review of Glass (1950) and Lloyds and William (1948). Since the observation of Thorn and Emerson (1940) in premenstrual œdema it is usually admitted that the sex hormone may cause sodium retention. There are also evidences of increased excretion of œstrogen in liver diseases (Gilder and Hoagland, 1946; Glass *et al*, 1944). Kark and associates (1951) in cirrhotic cases found low value of 17-ketosteroids but increase in the urinary corticoid suggestive of adrenal dissociation with reduction in N-hormone but increase in urinary cortins. Eisenmanger and co-workers (1949) also obtained reduced concentration of sweat and salivary sodium with relative increase in potassi possibly due to salt active adrenal steroids. All these observations point to the fact that in liver diseases there is profound alteration in the physiological activity of sex hormone and adrenal steroids which may be responsible for increased sodium retention and œdema formation.

3. *In Renal Œdema*—When one enters the realm of such a multifaceted problem one would wonder at the complexity with which the diseased kidney would be called upon to handle the salt problem. In an illuminating lecture Robert Platt (1952) discussed some of its interesting aspects. In renal failure there is marked reduction of GFR and if the tubular reabsorptive capacity were unabated this would undoubtedly lead to salt retention. But curiously enough this is not encountered even in the terminal stage of glomerulonephritis and this is possibly due to increase in the the fraction of sodium that is rejected by the renal tubule. This may appear to be a defensive mechanism on the part of the failing kidney to prevent any inordinate increase in the electrolyte concentration of the *melieu interieur* and under such trying circumstances kidney with its 'back to the wall' may even actively secrete potassium if not sodium for elimination (Platt, 1950). Enhanced elimination of sodium fraction of the filtered load as conceived by Dr. Platt is considered teleologically as an adaptation for the diseased kidney. But this is rather contradictory to his other view that in such cases the pathogenesis is due to the reduction in the amount of functioning renal substances, that is loss of nephrons and the remaining nephrons work in an extremely efficient way, the only handicap being their limited number of units. If that be so, it is difficult to reconcile that the reabsorption of sodium by the remaining hyperactive nephrons is impaired resulting in increase in the percentage of filtered sodium and potassium being rejected. Possibly there are some other unknown stimuli to dictate the renal tubules in excreting more sodium if hyperfunction of the renal tubule is admitted. One other reason may be an increase in the filtration pressure of the surviving individual glomeruli presenting increased sodium load to the corresponding tubule for rejection.

If diminished GFR fail to cause sodium retention in the terminal stage of nephritis it is of particular interest that in the nephritic stage with marked œdema, too often normal or even supernormal filtration rate has been observed. Here it may be suggested that there is increased tubular activity in such conditions with resultant salt retention in spite of increased GFR. There are no criteria to measure the tubular sodium hyperreabsorption but increased tubular activity has been inferred from increased TmPAH and TmG (Eder *et al*, 1948 and 1949; Galan, 1949). In cases where diminished GFR was encountered, the following sequence of events has been suggested by Eder *et al*—albuminuria leads to hypovolæmia causing renal ischæmia which in turn depresses GFR resulting in sodium retention with œdema. Of course other important factors to consider besides diminished oncotic pressure are the role of VDM and VEM, cortical steroid and ADH.

In the acute stage of the disease, due to predominant widespread capillary involvement, renal retention of sodium may not be a major contributory factor in œdema. But all the renal functions are variedly depressed, the depression of GFR being more accentuated with relatively better supply of the renal tubule (renal hyperæmia). This in fact may lead to glomerulotubular dissociation with increased reabsorption of sodium (Bradley, 1949; Black *et al*, 1948; Earl *et al*, 1944).

4. *In Nutritional Œdema*—The exact role of salt retention as a factor in œdema found in cases of starvation and in association with malnutrition has not yet been worked out but suggestion of such factors may be deduced from earlier observation of the author on the beneficial role of mercurial diuretics in such cases (Lowe and Chakravarti, 1945). It is highly probable that renal ischæmia (as a result of diminished cardiac output or otherwise) may be responsible for salt retention. Effect of erect posture and exercise, both of which increase œdema, may be explained by their exaggerated effect on renal ischæmia and diminished cardiac output as in cardiac œdema. Another factor to be considered for such salt retention would be altered adrenocortical, gonadal, hormonal balance, amply demonstrated in these cases and McCance (1951) in an exhaustive review on this subject has also tentatively suggested the possibility of salt retention as a factor in these cases.

5. *In other conditions*—Eclampsia and Preeclampsia—In normal pregnancy renal hæmodynamics remain more or less steady but definite renal ischæmia has been reported in many recent papers during eclampsia and preeclampsia (Kenney *et al*, 1950; de Alvarex, 1950; Turner and Hauck, 1950). Some investigators have attributed eclampsia and preeclampsia, partially

st.

in urinary-tract infections

'Mandelamine' is worth considering FIRST

1 'Mandelamine' is the first choice for providing urinary antisepsis because:
It rarely, if ever, gives rise to drug-resistance and is effective even against organisms that have become resistant to streptomycin or sulphonamides.

2 It is quickly effective against most of the organisms commonly found in urinary-tract infections.

3 'Mandelamine' is safe and well tolerated and is eminently suitable for use in children.

4 'Mandelamine' therapy is economical and simple — just 3 or 4 tablets three times a day. No fluid regulation or dietary restriction is necessary.

Comparative studies indicate that the effectiveness of 'Mandelamine' is of about the same order as that of the sulphonamides or of streptomycin.

'MANDELAMINE' tablets

Further information on request

Each enteric-coated tablet contains 0·25g. (gr. 3¾) methenamine mandelate

MENLEY & JAMES, LIMITED, 141, FORT STREET, BOMBAY. *Incorporated with limited liability in England*

Sole Distributors in India: PHARMED LTD., P.O.B. 1185, BOMBAY

MP42 IND

'Mandelamine' is the registered trade mark of Nepera Chemical Co., Inc.

. . . . . for the common anemias . . . .

The Squibb **RUBRA** Family

	RUBRAMIN *per c.c.*	**RUBRAFOLIN** *(per tablet)*	**RUBRATON** *(per 5 cc.)*
Vitamin B_{12} *(micrograms)*	15, 30, 50 & 100	25	4.17
Folic Acid *(milligrams)*		1.67	0.28
Iron *(milligrams)*			220 Ferric Ammonimum Citrate
Therapeutic Dosage	15 to 30 micrograms daily for a week or more; when neurologic involvement is present 50 micrograms or more daily	1 or 2 tablets daily	2 teaspoonfuls t.i.d.
Maintenance Dosage	Generally, 30 to 50 micrograms twice a month; when neurologic involvement is present, 50 micrograms a week.	1 tablet daily	1 teaspoonful t.i.d.
Supply	1 cc. ampul, 15 micrograms per ampul; 5 cc. vials, 30, 50 & 100 micrograms of Vitamin B_{12} per cc.	Bottles of 25 and 100	Bottles of 4 oz.

Note : The above are average doses. As with all anti-anemia preparations dosages must be adjusted to meet the needs of the individual patient. Because of the serious nature of the disease, true Addisonian pernicious anemia should be treated with Rubramin parenterally.

E·R·SQUIBB & SONS
NEW YORK

SARABHAI CHEMICALS
BARODA

to the inability of the kidney to eliminate sodium as in cardiac failure (Dieckmann *et al*, 1951). This may be due to either renal ischæmia or some altered humoral balance. Augmentation of the extracellular fluid volume even in normal pregnancy may be connected with salt retention under the influence of sex hormone.

B. Water Retention

Physiological secretion of neurohypophysis (ADH) inhibits water elimination and it has already been pointed out before that the site of action is possibly at the distal tubule. It acts directly on the kidney without any intervention of other organs and within physiological limits it has no effect on the glomerular filtration rate. Secretion of this hormone is in response to some changes in the osmotic concentration of the plasma. In a series of unexcelled experiments Verney (1947) demonstrated the presence of osmoreceptors supplied by the blood of the internal carotid artery, which are susceptible to rapidly changing osmotic pressure of plasma. Large quantity of water when administered *per os* produces slight but perceptible dilution of the blood followed by diuresis mediated by the inhibition of the ADH secretion. Similarly, injection of hypertonic saline or dehydration causes antidiuresis due to increased osmolarity of the plasma.

Consensus of opinion is that there can be no water retention without a corresponding retention of salt. Administration of pitressin with adequate intake of water experimentally may lead to excessive water retention resulting in water intoxication but not clinical œdema. In many clinical conditions of œdema the water elimination test is blunted (Aldersberg and Fox, 1943; Labby and Hoagland, 1947; Leslie *et al*, 1948) and the tempting suggestion has been made that this may be due to increased circulating ADH or its degraded product. Search for antidiuretic activity in urine and blood of such patients also revealed increased quantity of antidiuretic substances. Of the few methods though not convincing for biological assay of ADH and its degraded products, the widely used ones are Burn's rat test (1931) with its various modifications for urine and the test of Birnie *et al* (1949) in rat for serum. In order to increase the antidiuretic activity of the urine, dialysis and concentration has also been used. But it may be mentioned here that dialysis diminishes the activity of pitressin and posterior pituitary extract (Lipschitz and Stokey, 1947). A good review of the method of assay has been given by Ham (1943).

An important communication on this subject was published by Robinson and Farr (1940). They found by the modified rat assay method of Burn the presence of an antidiuretic substance in the urine of patient in acute hæmorrhagic nephritis, sulphonamide nephropathy, nephrotic syndrome, premenstrual œdema and several other conditions. Subsequently Ralli and her associates (1945) in an interesting study of cirrhotic cases found excessive amount of antidiuretic substance in the urine (ADS), and failed to find any co-relation with the albumin concentration of plasma and œdema. In subsequent years an imposing array of experimental and clinical data demonstrated the presence of such substances in the urine and bood of patients with varied clinical conditions like cardiac œdema, eclampsia and preeclampsia, pregnancy, etc. Gopalan (1950) in India also reported such antidiuretic substances in nutritional œdema. However, Saha and Sen Gupta (1952) failed to demonstrate any such substance in nutritional œdema although they reported substantive increase of ADS in various cirrhotic conditions.

The usual explanation for observed increase in ADS in urine is the inability of the liver to inactivate normal antidiuretic hormone in the clinical conditions where liver is primarily involved as in cirrhosis or affected indirectly as in eclampsia, heart failure and malnutrition. The evidence in favour of this hypothesis is derived from the fact that slices of liver and liver extracts inactivate pitressin *in vitro* (Heller and Wiban, 1935; Eversole *et al*, 1949; Birnie, 1950).

Despite earlier attempts to attribute this antidiuresis to increased ADH it is now generally agreed that they should be referred as antidiuretic substances whose identity has not yet been ascertained (Ralli and Leslie, 1950; Ames *et al*, 1950). The differences between ADH (along with pitressin) and ADS are too many, the most important being their behaviour after dialysis and treatment with thioglycollic acid, absence of chloruretic effect of ADS and its ineffectiveness in hydrated dogs. Moreover, in most of these experiments comparison has been drawn with the activity of pitressin or pituitary extract whose identity with ADH itself is doubtful. Frequent occurrence of hyponatræmia (low sodium in plasma) with resultant low osmolarity of the plasma in clinical œdema is also contrary to the theory of Verney in promoting increased secretion of ADH. Defective water elimination test cannot be explained on the basis of this theory alone. Another antidiuretic substance without any relation to ADH itself has been described by Baez *et al* (1950). They found appreciable quantity of VDM (vasomotor depressant material) in cases of clinical œdema with oliguria. They also showed that VDM caused antidiuresis through neurohypophysis (1952). Role of VDM in clinical œdema is however questionable as VDM is not excreted in urine except in severe renal damage. The clinical status of VDM itself is rather insecure from the recent finding that VDM does not appear in dogs without anæsthesia in experimentally induced hæmorrhagic shock. In short it may be said that in œdema of cirrhosis liver, eclampsia, congestive failure, nutritional œdema and others there is frequent association of increased antidiuretic substances in urine and blood, but their identity and relation with ADH and mode of action are highly speculative. Technical difficulty for assaying their activity by acceptable methods leaves a big hiatus in our present day knowledge. In the words of Homer Smith 'as the data stand, about the only

conclusion to be drawn is that the demonstration of antidiuretic activity in the rat affords no reliable information on the secretion of ADH or its excretion in the urine'.

References

Aas, K. and Blegen, E.—*Scandinav. J. Clin. Invest.*, **1**: 22, 1949.

Aldersborg, D. and Fox, C. D.—*Ann. Int. Med.*, **19**: 642, 1943.

Ames, R. G., *et al—Endocrinology*, **46**: 215, 1950.

Baezs, M. A. and Shorr, E.—*Am. J. Physiol.*, **162**: 198, 1950.

Idem—Ibid., **169**: 123, 1952.

Black, D. A. K., *et al—Clin. Sci.*, **6**: 295, 1948.

Black, D. A. K., *et al—Ibid.*, **9**: 205, 1950.

Blake, W. D., *et al—Am. J. Physiol.*, **157**: 1, 1949.

Birnie, J. H.—*Federation Proc.*, **9**: 12, 1950.

Birnie, J. H., *et al—Proc. Soc. Exper. Biol. Med.*, **70**: 83, 1949.

Bradley, S. E.—*Am. J. Med.*, **7**: 382, 1949.

Bradley, S. E. and Blake, W. D.—*Ibid.*, **6**: 470, 1949.

Bradley, S. E. and Brodley, G. P.—*J. Clin. Invest.*, **26**: 1010, 1947.

Burn, J. H.—*Quart. J. Pharmacy and Pharmacol.*, **4**: 517, 1931.

Chalmers, T. C. and Davidson, C. S.—*New England J. Med.*, **240**: 449, 1949.

Davis, J. O. and Shock, H. W.—*J. Clin. Invest.*, **28**: 1459, 1949.

Davis, J. O. and Smith, J. R.—*Am. J. Med.*, **3**: 704, 1947.

de Alvarez, R. R.—*Am. J. Obstet. & Gynæcol.*, **60**: 1051, 1950.

Denning, Q. B. and Lentscher, J. A.—*Proc. Soc. Exper. Biol. & Med.*, **73**: 171, 1950.

Dieckmann, W. J., *et al—Am. J. Obstet. & Gynæcol.*, **61**: 1100, 1951.

Earle, D. P., *et al—J. Clin. Invest.*, **23**: 119, 1944.

Edelman, I. S., *et al—Ibid.*, **29**: 925, 1950.

Eder, H. A., *et al—J. Clin. Invest.*, **27**: 532, 1948.

Idem—Ibid., **28**: 779, 1949.

Eisenmenger, W. J., *et al—J. Lab. & Clin. Med.*, **34**: 1029, 1949.

Elliott, J. M.—*Lahey Clin. Bull.*, **6**: 251, 1950.

Eversole, W. J., *et al—Endocrinology*, **45**: 378, 1949.

Falcon, W. W., *et al—J. Clin. Invest.*, **28**: 595, 1949.

Farnsworth, E. B. and Krakusin, J. S.—*J. Lab. & Clin. Med.*, **33**: 1545, 1948.

Futcher, P. H. and Schroeder, H. A.—*Am. J. Med. Sci.*, **204**: 52, 1942.

Gatan, E.—*Am. J. Dis. Child*, **77**: 341, 1949.

Gibson, J. G. and Evans, W. A.—*J. Clin. Invest.*, **16**: 851, 1937.

Gilder, H. and Hoagland, C. L.—*Proc. Soc. Exper. Biol. & Med.*, **61**: 62, 1946.

Glass, S. J.—Soskins' Progress in Clinical Endocrinology. Grune & Stratton, New York. 1950.

Glass, S. J., *et al—J. Clin. Endocrinol.*, **4**: 54, 1944.

Goodyer, A. V. N., *et al—J. Clin. Invest.*, **29**: 973, 1950.

Gopalan, C.—*Lancet*, **1**: 304, 1950.

Ham, G. E.—*Proc. Soc. Exper. Biol. & Med.*, **53**: 210, 1943.

Heller, H. and Wiban, F. F.—*J. Physiol.*, **85**: 502, 1935.

Hickim, J. B. and Cargill, W. H.—*J. Clin. Invest.*, **27**: 10, 1948.

Kark, R. M., *et al—Arch. Int. Med.*, **88**: 61, 1951.

Kattus, A. A., *et al—Bull. Johns Hopkins Hosp.*, **84**: 344, 1949.

Kenney, R. A., *et al—J. Obstet. & Gyn., Brit. Empire*, **57**: 960, 1950.

Labby, D. H. and Hoagland, C. L.—*J. Clin. Invest.*, **26**: 343, 1947.

Lasche, E. M., *et al—Am. J. Med. Sci.*, **222**: 459, 1951.

Leslie, S., *et al—Fed. Proc.*, **7**: 71, 1948.

Lipschitz, W. L. and Stokey, E.—*Am. J. Physiol.*, **148**: 259, 1947.

Lloyd, C. W. and Williams, R. H.—*Am. J. Med.*, **4**: 315, 1948.

Lowe, J. and Chakravarti, H.—*Indian M. Gaz.*, **80**: 209, 1945.

Massell, B. E. and Warren, J. E.—*J. A. M. A.*, **144**: 1335, 1950.

McCance, R. A.—Med. Res. Council Special Rep. Ser., No. 275, His Majesty's Stationery Office, London. 1951.

Meneely, G. R. and Kaltreider, N. L.—*J. Clin. Invest.*, **22**: 521, 1943.

Merrill, A. J.—*Ibid.*, **25**: 389, 1946.

Idem—Am. J. Med., **6**: 357, 1949.

Merrill, A. J. and Cargill, W. H.—*J. Clin. Invest.*, **27**: 272, 1948.

Merrill, A. J., *et al—Am. J. Med.*, **1**: 468, 1946.

Mokotoff, R. and Ross, G.—*J. Clin. Invest.*, **27**: 335, 1948.

Parish, A. E.—*Ibid.*, **28**: 45, 1949.

Pelers, J. P.—*New England J. Med.*, **239**: 353, 1948.

Phillips, R. W. and Phillips, A. M.—*Arch. Int. Med.*, **87**: 636, 1951.

Pitts, R. F.—*Fed. Proc.*, **7**: 418, 1948.

Platt, R.—*Clin. Sci.*, **9**: 367, 1950.

Idem—Brit. M. J., **1**: 1372, 1952.

Ralli, E. P. and Leslie, S. H.—Soskin's Progress in Clinical Endocrinology. Grune & Stratton, New York. 1950.

Ralli, E. P., *et al—J. Clin. Invest.*, **24**: 316, 1945.

Reinhardt, W. O.—*Proc. Soc. Exper. Biol. & Med.*, **78**: 335, 1951.

Reynolds, T.—*Ibid.*, **79**: 118, 1952.

Richards, D. W.—*Am. J. Med.*, **6**: 772, 1949.

Ricketts, W. E., *et al—J. Clin. Invest.*, **30**: 1157, 1951.

Robinson, F. H. and Farr, L. E.—*Ann. Int. Med.*, **14**: 42, 1940.

Saha, H. and Sen Gupta, K. P.—*J. Indian M. A.*, **22**: 1, 1952.

Schroeder, H. A.—*Am. Heart J.*, **22**: 141, 1941.

Smith, H. W.—The Kidney. Oxford University Press, New York, 1951.

Sprague, R. G., *et al—J. A. M. A.*, **144**: 1341, 1950.

Srota, J. H., *et al—J. Clin. Invest.*, **29**: 187, 1950.

Starr, I.—*Ann. Int. Med.*, **30**: 1, 1949.

Starr, I. and Rawson, A. J.—*Am. J. Med., Sci.*, **199**: 27, 1940.

Stead, E. A.—*Am. J. Med.*, **6**: 470, 1949.

Stead, E. A., *et al—Am. Heart J.*, **35**: 529, 1948.

Stephen, H., *et al—J. Clin. Invest.*, **30**: 1200, 1951.

Thorn, G. W. and Emerson, K.—*Ann. Int. Med.*, **14**: 757, 1940.

Threefoot, S. T., *et al—Proc. Soc. Exper. Biol. & Med.*, **66**: 369, 1947.

Turner, H. B. and Houck, C. R.—*Am. J. Obstet. & Gyn.*, **60**: 1187, 1950.

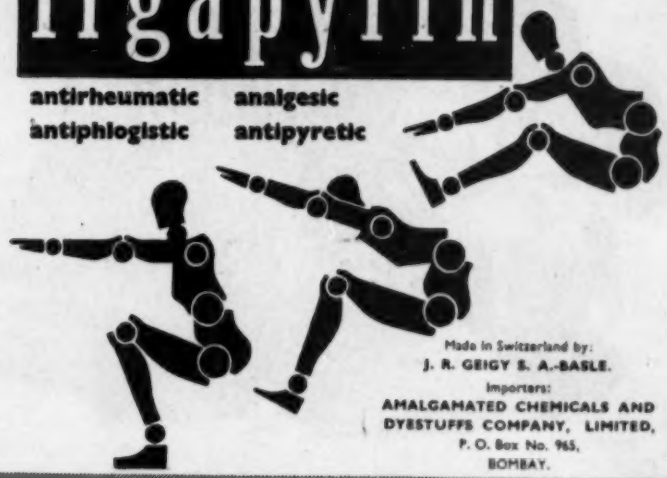
Verney, E. B.—*Proc. Roy. Soc. London*, **135**: 25, 1947.

Warren, J. V. and Stead, E. A.—*Arch. Int. Med.*, **73**: 138, 1944.

Geigy

Irgapyrin

antirheumatic analgesic
antiphlogistic antipyretic



Made in Switzerland by:
J. R. GEIGY S. A.-BASLE.
Importers:
AMALGAMATED CHEMICALS AND DYESTUFFS COMPANY, LIMITED,
P. O. Box No. 965,
BOMBAY.

for
cirrhosis of liver
and
vitamin B deficiency

A CHOLINE and METHIONINE preparation reinforced with VITAMIN B_1, B_2, B_6, CALCIUM PANTOTHENATE and VITAMIN B_{12}; indicated in Cirrhosis of Liver, nutritional anæmia, fatty degeneration of the liver and Vitamin B deficiency.

Available in 4 oz. and 1 lb. packings.

CHOLIVIN

ORCL'S
For Quality and Standard

THE ORIENTAL RESEARCH & CHEMICAL LABORATORY LTD.
QUMARESH HOUSE, SALKIA, HOWRAH

ADYSMENE

For causal therapy of dysmenorrheic complaints:

★ antispasmodic ★ analeptic
★ analgesic ★ stimulating

It does not cause

★ tiredness ★ habituation
★ side-effects ★ mania

CILAG *Swiss Pharmaceuticals*

CILAG-HIND LTD., 15, CAWASJI PATEL ST., BOMBAY 1.

NAS 86/53

WESSON, L. G., *et al*—*Bull. N. Y. Acad. Med.*, **24**: 586, 1948.

WHITE, A. G., *et al*—*J. Clin., Invest.*, **29**: 1445, 1950.

WINTON, F. R.—*Physiol. Rev.*, **17**: 408, 1937.

CASE NOTES

SIRENOMELIAN MONSTER
(A Case of Sympus apus)

B. P. TRIBEDI, M.B.(CAL.), D.B.(LOND.), F.N.I.

AND

D. BARUA, M.B.(CAL.),

Department of Pathology and Bacteriology, Medical College, Calcutta

This mermaid-like deformity of the fœtus is of special concern to those interested in fœtal malformations because of its comparative rarity. This deformity is characterised by incomplete or complete fusion of the lower limbs with or without feet.

This symelian deformity was subgrouped into 3 main groups by St. Hilaire in 1836, viz.—

(1) Symele, when the two inferior extremities are almost perfectly united terminating in a double foot with the sole on the anterior aspect.

(2) Uromele, when the lower extremities are very incompletely united terminating in an incomplete single foot with the sole anteriorly.

(3) Sirenomele, when there is incomplete fusion of lower extremities terminating in a stump or a point without any foot.

Forster (1861), however, introduced an almost similar classification later on with simpler terminology. He called symele of St. Hilaire as sympus dipus, uromele as sympus monopus and the sirenomele as sympus apus. Proshek (1925) thought the sympus apus as the commonest form of this sirenomelian monstrosity.

The anatomic abnormalities of the inferior extremity have formed the basis of these nomenclatures in which the constantly associated maldevelopment of the vascular urogenital systems have not been taken into account. Further work on chemo-differentiation and organisers is expected to throw more light on the causation of these abnormalities and these nomenclatures may then undergo a thorough revision.

CASE REPORT

A healthy young woman aged 28 years was admitted in the hospital with pain in the abdomen when she was carrying 34 weeks. She was a third gravida,—two previous confinements had been normal in every respect and mother had no knowledge of monsters or gross congenital deformity on either side of the family. She did not attend any antenatal clinic.

Soon after admission she delivered a mermaid-like dead monster spontaneously in breech presentation. A necropsy was performed and revealed the following features:

The fœtus weighed 3 lb. 7 oz., measured 10·3/4 inches from crown to the tip of inferior extremity. There was no demonstrable abnormality in the head, neck, thorax or upper extremities. Below the umbilicus the abdomen was found gradually tapering and below the groove marking the junction of trunk and lower extremity, a single lower limb continued downwards. The region of the knee was marked by a faint linear depression. Only one femur could be felt but two patellæ could be palpated on the posterior aspect of the knee-joint. Below the knee only one bone could be palpated tapering to a point about one inch below the knee-joint. There was no foot of any description (Fig. 1, *vide* Plate). The movements of the hip and knee were limited to only slight flexion. Skiagram was taken which revealed single bone in each segment (Fig. 2, *vide* Plate) of the only lower limb present while the skeleton was normal.

The external genital organs were completely absent and there was no anal or urinary opening. The umbilical cord contained only one artery and one vein.

The diaphragm was normal. The liver was big and almost completely filled up the abdomen dipping down into the pelvis on the right side. The gall bladder, spleen, pancreas were normal in size, position and appearance. The coils of intestine looked normal but no ileocæcal junction or vermiform appendix could be identified. The transverse colon ended suddenly in a blind pouch in the left hypochondrium. After this blind end no trace of the colon could be found out.

On displacing the coils of intestine the site of the kidney and adrenal glands was found to be empty, as they were absent and so also the bladder and the ureters. Lying in the inguinal region between the muscles on the right side was found a small lymphnode like structure which on subsequent histological examination proved to be the testes.

The vascular system above the diaphragm was found to be normal. The abdominal aorta gave off a sacral artery, a long medium sized branch which went down to the lower limb and the aorta itself then took a turn upwards to the umbilicus and then entered the umbilical cord as umbilical artery.

The two segments of the single lower limb on dissection were found to be formed of one bone in each segment. The upper segment was made up of a femur with a flattened head with its normal posterior surface looking anteriorly. The only hip-joint that was present, was in the midline and was situated dorsally. The bone below the knee-joint looked like tibia and the bone was rapidly tapering down to a pointed end.

The joint between the segments was also reversed and two patellæ, were found on the posterior aspect. The pelvic girdle was made up of only fused iliac bones with no development of os pubis and ischium.

COMMENTS

Incidence of this type of fœtal monstrosity is rare and Proshek (1925) claims that fused lower limbs are found in 1 per cent of monsters born.

Associated with this monstrosity various deformities are met with some of which are constant. Recently Bhaskar Rao reported a case of sympus apus in which,

the spleen was absent. Newbill (1941) has beautifully summarised the various abnormalities that were found in this type of disorder recorded by Kampmeier (1927) from various literature. The deformities found in this case have already been recorded by some or other workers excepting the complete absence of the suprarenal glands. The adrenal gland was stated to be abnormal in 14 cases in Kampmeier's records but the type of abnormality is not specifically mentioned. In this case the glands were completely absent.

Kampmeier's observation that abnormalities of the urogenital system, intestine and vessels were as constant as the abnormality of the lower limb has proved true in this case also and further work only will show which is the primary defect.

Summary

1. A sireniform monster is described and detailed autopsy findings recorded.

2. This case appears to be the only one in which the suprarenal gland was completely absent.

Acknowledgment

Our grateful thanks are due to Dr. D. C. Chakraborty, M.D., F.R.C.S., Principal Medical College, Calcutta, for his kind permission to report this case.

References

Bhaskar Rao, K. J.—*Obst. & Gynec. of India*, **2**: 49-51, 1951.

Forster, A.—Quoted by Newbill, H. P. "Die missbildungen des Menschen", Jena 1861.

Kampmeier, O. F.—*Anat. Record*, **34**: 365, 1925.

Newbill, H. P.—*Am. J. Dis. Child.*, **62**: 1233-1241, 1941.

Proshek, C. E.—*Am. J. Obst. & Gynec.*, **10**: 15-35, 1925.

St. Hiliare—*Histories des anomalies*, **2**: 239, 1836.

SUICIDAL POISONING BY DINITROPHENOL

S. ANANTA SWAMY, B.SC., M.B.B.S.; D.P.H., M.P.H.,

Chemical Examiner to the Government of Mysore, Public Health Institute, Bangalore

The nitro-substitution products of phenol are obtained by the action of nitrous acid on aniline and nitric acid on phenol. They possess a tinctorial value and are largely used as dyeing material for wool, silk and leather, either alone or in combination with other substances. Some of them decompose with detonation and are therefore used in the manufacture of certain explosives.

Poisoning by dinitrophenol is a relatively rare occurrence in India, although a number of mining and other industries use this compound for many purposes, such as, manufacture of explosives and dyes. Indian books on forensic medicine and toxicology do not record instances of poisoning by this substance. However dinitrophenol is said to have caused numerous cases of poisoning among the French munition workers during the Great War of 1914-18 (Smith and Cook, 1948) Among other uses, dinitrophenol is recommended as a therapeutic agent in the treatment of obesity. Death due to its overdosage has also been reported (Anderson, Reed and Emerson, 1933; Tainter and Wood, 1934).

Case Report

During the early part of 1952, dinitrophenol was detected in the viscera and other articles in a medicolegal case, having a history of suicidal poisoning with "a yellow coloured acid", forwarded for analysis to the chemical examiner's laboratory at the Public Health Institute, Bangalore. The following records the history of this case, the post-mortem findings and the results of chemical analysis.

History (Extracts from Cases No. Ch. Ex. 156/20-6-52 and Ch. Ex. 169/28-6-52)—On the night of 9-6-52 a railway cooly or porter, working in the Mysore mines, Kolar Gold Fields, took a quantity of yellowish substance described as "Manchi Acid" mixed it with water in a brass vessel and drank it with the intention of committing suicide. Soon after, he is reported to have had an intolerable burning sensation in his stomach and vomiting. The vomited matter was yellowish in colour. He became very "noisy" and woke his brother, the only other inmate in his house. He was later removed to the hospital where he expired the next morning. His condition on admission to the hospital is described as a state of profuse shock, with feeble pulse (due to fall of blood pressure) and rapid respiration. He was incoherent in speech.

Physical examination is said to have revealed that the tongue and mouth were eroded, pupils dilated, conjunctiva congested, and that there was profuse sweating and some cyanosis. Consciousness was not lost till the end, but the state of excitement and incoherent talk is said to have persisted. Death occurred about 5-6 hours after the administration of the poison.

Post-mortem examination (Extract from the post-mortem report)—The pupils were dilated and the conjunctiva congested. A watery fluid was escaping from the nostrils and mouth. The fingers were clenched and the nails cyanosed. Rigor mortis was present in the lower extremities. Larynx, trachea, and lungs were congested. The mouth and œsophagus were corroded and of a whitish yellow colour. The stomach was distended with gas and contained a yellowish foul smelling liquid. The mucous membrane of the stomach was eroded and stained yellow. The intestines showed no obvious lesions. The kidneys were congested. The other organs were healthy.

Chemical analysis—The following articles were sent for analysis:

(i) a brass vessel containing traces of the substance used, (ii) some mud containing vomit, (iii) stomach and intestine with contents, (iv) liver, spleen and kidney, (v) stomach wash. The items (iii), (iv) and (v) were preserved in rectified spirit. The routine analysis of the viscera and vomit for corrosive acids and alkalies, irritant salts, metallic irritants, organic poisons and vegetable alkaloids was conducted.

The remnant in the brass vessel consisted of a pale yellow solid with the following properties:

1. Solubility: Sparingly soluble in water. Soluble in hot water crystallising into needleshaped pale yellow crystals and rectangular plates on cooling. Soluble in organic solvents, such as ethyl alcohol, amyl acetate, ether and petroleum ether.

2. Taste: Bland or not characteristic, definitely not bitter.

3. Reaction: Distinctly acid to litmus.

4. Heat: Melted on heating, sublimed and burned with smoky flame leaving a charred residue. Sublimate consisted of pale yellow crystalline needles and rectangular plates. Did not explode on heating.

5. Melting point: 112°-114° C.

6. Tests for picric acid:

(i) Dyed wool pale yellow in faintly acid solutions, but not cotton. The colour was partly withdrawn by alkalies. It was decolorised with hydrochloric acid; turned brown with sulphuric acid and nitric acid; not changed by ammonia; but was partly withdrawn by 10 per cent sodium hydroxide solution.

(ii) An alkaline solution of the substance treated with a concentrated solution of potassium cyanide (slight excess) turned brown-red in colour on warming, due to the formation of isopurpurate.

(iii) Treatment with an ammoniacal solution of copper sulphate did not produce a yellowish green crystalline precipitate.

(iv) When heated with an alkaline glucose solution a red-brown colour was produced, due to reduction and formation of picramic acid.

The residue in the brass vessel did not answer to all the tests for picric acid (trinitrophenol) but differed from it in taste, melting point and reaction to ammoniacal copper sulphate. It answered to tests for phenolic compounds and nitro-derivatives:

(a) A neutral solution treated with dilute ferric chloride solution gave a reddish brown or port wine colour.

(b) The soiution was reduced with tin and dilute hydrochloric acid, filtered, and the filtrate diazotised with a solution of sodium nitrite (in cold) and coupled with β-naphthol in sodium hydroxide. A port-wine red colour was produced. (Jacobs, 1946).

It had the same melting point as dinitrophenol, namely 112°-114° C., and differed from the yellow and orange coal-tar dyes, naphthol yellow, naphthol yellow—S and others in melting point and dyeing properties (Lungs and Keane, 1911 and Cox, 1946).

The viscera and vomit were subjected to Stas-Otto process of extraction of organic poisons. A pale yellow crystalline substance was recovered from the acid solution on extraction with petroleum ether and ether. Tnis had properties identical with those of the substance found in the brass vessel. 650 mgms. of this substance were recovered from the stomach contents (460 c.c.), 815 mgms. from the vomited matter (530 c.c.), and traces from the liver.

Further investigations by the police authority revealed that the deceased had access to dinitrophenol kept in Mysore mines, Kolar Gold Fields, and a sample obtained from this stock showed properties identical with the substance isolated from the residue in the brass vessel and the viscera.

Summary

A case of poisoning by dinitrophenol is reported since it is thought to be of some medico-legal interest. The only plea for its presentation is its rarity.

Acknowledgment

My grateful thanks are due to Dr. T. Chandrasekhariah, Director of Public Health in Mysore, and Dr. C. V. Natarajan, Deputy Director of Public Health, for kind permission to publish this case.

References

Anderson, Reed and Emerson—*J.A.M.A.*, **100**: 629, 1933.

Cox, H. E.—Chemical Analysis of Foods, 1946, Appendix, pp. 308-09.

Jacobs, M. B.—Analytical Chemistry of Industrial Poisons, Hazards and Solvents, Vol. I, pp. 570.

Lungs, G. and Keane, C. A.—Technical Methods of Chemical Analysis 1911, Vol. III, Part II, pp. 1046-80.

Smith and Cook—Taylor's Principle and Practice of Medical Jurisprudence, 10th Ed., 1948, Vol. II, p. 629.

Tainter and Wood—*J.A.M.A.*, **103**: 1147, 1934.

POISONING DUE TO ARTIFICIAL OIL OF BITTER ALMONDS

R. A. DESAI, M.R.C.P. (LOND.), M.B.B.S. (BOM.), M.R.C.S. (ENG.),

Honorary Physician,

Seth Vadilal Sarabhai General Hospital, Ahmedabad

A case of systematic poisoning resulting from local inunction of artificial oil of bitter almonds—oil of mirbane—as it is known commercially, is herein recorded. Natural oil of bitter almonds is a favourite remedy prescribed by some surgeons and physicians for local inunction. It is advised for massage, for restoring the functional activity of a damaged limb—after the damage itself is recovered from. Instead of dispensing the natural oil, the artificial oil of bitter almonds which is a mononitrobenzene—and is known as oil of mirbane, is liable to be supplied to the patient by the chemist, as occurred in the case here recorded. The latter is a very toxic substance and its inadvertent use may have serious consequences. This case is, therefore, considered worth recording.

Case Report

Miss L. M., registered No. 1942, aged 14, was admitted under my care at the Seth Vadilal Sarabhai General Hospital, on 17-4-52, with the following history:

Three days prior to admission, i.e., on 14-4-52 the patient got pain in the back and headache and this was followed by generalised convulsions, lasting for one hour. This was accompanied with moderate fever. On 16-4-52, she developed convulsions again, lasting for 5 minutes. The third attack of convulsions occurred on the next day, i.e., on 17th April, on which day she was brought to the hospital.

Examination on admission showed marked pallor of the face and the body and extreme cyanosis of the lips, tongue and the nails. Generalised twitchings of the muscles were present. Consciousness was not impaired. Pulse was 120 p.m., respiration 26 p.m. and temperature was 100·6° F. Examination of the cardiovascular, nervous, respiratory and gastro-intestinal systems showed no abnormality. Blood pressure was 105/70 mm. of Hg.

Laboratory investigations: 1. Blood examination on 18-4-52: R.B.C.—3,440,000 per c.mm. W.B.C. 11,500 per c.mm. Hæmoglobin—50 per cent.

Differential Count: Poly—68 per cent; Lympho—26 per cent; Mono—2 per cent; Eosino—4 per cent.

On 23-4-52 blood examination showed: R.B.C.—1,200,000 per cmm. and Hæmoglobin—26 per cent. A marked anæmia had thus developed.

2. Urine examination: albumin one plus, pus cells 3 to 4 per field. Occasional hyalogranular cast.

3. van den Bergh reaction—negative.

4. Sternal puncture:

Megaloblasts 8 per cent, Early erythroblasts 14 per cent, Late erythroblasts 14 per cent, Normoblasts 9 per cent, Leucocytes mature and premature 55 per cent, Parsites absent.

5. Spectroscopic examination of blood: Absorption band of cyanhæmoglobin not detected.

Previous history—Patient sustained a fracture of the middle of the right thigh on 13th January, 1952. She was kept in plaster for 3 months. Plaster was removed on 10-4-52 and massage of the limb with oil of bitter almonds was advised by the surgeon. The massage was started on 13th April with artificial oil of bitter almonds (oil of mirbane). The oil was massaged vigorously and within three to four days 3/4 of the bottle of 4 ozs., was used up. Patient developed symptoms one day after the massage was started. Even then massage with the oil was continued, till the day of admission to the hospital.

Progress in the hospital—Patient's general condition deteriorated and the anæmia increased. Marked dyspnœa and cyanosis developed. After two blood transfusions, and other supportive therapy with liver extract and iron, the anæmia gradually improved and the cyanosis also disappeared. A low grade fever was present for a few days. Patient was discharged from the hospital on 2-5-52, greatly improved.

Discussion and Comment

The symptoms exhibited by the patient were due to mononitrobenzene and not due to hydrocyanic acid as was suspected on admission. The bottle of oil of mirbane was produced by the relatives which was used for massage. It is probable that the symptoms arose out of inhalation of this volatile oil, rather than through percutaneous absorption. Mother who massaged the limb protected herself by covering her face and nose with a towel. The child was, however, not so protected. Symptoms developed 24 hours after the massage of the oil.

Nitrobenzene is used extensively in the manufacture of aniline. Its smell resembles that of oil of bitter almonds, and hydrocyanic acid. It is used in cheap perfumery and soaps under the name of artificial oil of almonds or oil of mirbane. It is highly toxic. One gram may prove fatal.

The toxic symptoms are usually delayed, sometimes for 12 hours. They resemble aniline poisoning. Burning, headache, intense cyanosis from methæmoglobinæmia in the lips and spreading over the entire body, air hunger and increased heart action, vomiting with characteristic odour, sensory skin irritation, convulsions and coma, are the symptoms produced when the oil is swallowed. Mortality is about 20 per cent. The cyanosis is a very striking feature. The face turning almost black, the blood when withdrawn is also very dark due to formation of methæmoglobin. The blood corpuscles undergo rapid and intensive destruction. Urine may contain hæmoglobin, methæmoglobin, porphyrin, urobilinogen, urobilin, albumin and casts. In case of recovery the anæmia is followed by active regeneration with marked hyperactivity of the bone marrow. Polycythæmia may subsequently develop.

Inhalation of nitrobenzene vapour produces symptoms such as convulsions, cyanosis, dyspnœa as recorded in the case described here. Onset of symptoms is somewhat delayed, and consciousness is not impaired.

Amin (1952) has recently recorded a case of nitrobenzene poisoning resulting from ingestion of 2 ozs. of oil of mirbane. The diagnosis, in Amin's case was arrived at from post-mortem examination of the viscera. In the case herein recorded the diagnosis was made clinically and the patient has survived.

Summary and Conclusions

1. A case of poisoning due to inunction of artificial oil of bitter almonds is recorded.

2. Symptomatology of poisoning due to nitrobenzene is described.

3. A word of caution is necessary. Whenever bitter almond oil is advised for massage, it should be definitely mentioned on the prescription that natural and not artificial oil of almonds should be used. I would, however, advise, oil of bitter almonds should never be prescribed for inunction or massage.

Acknowledgment

My thanks are due to Dr. M. D. Desai, M.S., F.R.C.S., M. CH. ORTH. Superintendent, Seth Vadilal Sarabhai General Hospital for allowing me to publish this case.

References

Amin, B. M.—*Indian, J. M. Sc.*, 6: 828, 1952.

Sollmann, T.—Manual of Pharmacology. 6th Edition 1943. W. B. Saunders Company. p. 667.

JOURNAL OF THE
INDIAN MEDICAL ASSOCIATION
CALCUTTA, SEPTEMBER, 1953

THORACOPLASTY IN LUNG TUBERCULOSIS

Surgery for pulmonary tuberculosis followed a blind path till the end of the last century when it was realised that the bony cage of the thorax must be broken to effect collapse of the encased lung for cure of the disease. Credit for the first thoracoplasty for lung tuberculosis is usually given to Cerenville, Quinke and Spengler. Since then it has undergone a wide modification and these modifications have resulted from observations of immediate and remote errors following the original technique. More detailed study of the anatomy of the thorax and its contents and more recent knowledge of the physiodynamics of respiration have also influenced these modifications to a great extent.

The names of Friederick, Bull, Brauer and others are associated with the improvements of this operation, but the largest credit for the development should go to Sauerbruch of Germany who in the early part of this century standardized this operation as a multiple stage paravertebral one. Alexander has aptly remarked "Sauerbruch aided in the evolution of the multiple-stage paravertebral operation more than anyone else".

Anterior thoracoplasty was first introduced by Wells in 1927. This is usually performed to supplement paravertebral operation in cases where anteriorly situated cavities remain uncollapsed. Alexander and Churchill have further modified Sauerbruch's operation and this, in recent years, goes by the name of "Standard thoracoplasty" in the United States.

The result of these thoracoplasties depends solely on the decrease in the volume of the hemithorax consequent on the number and the length of the ribs resected. It was left to Semb and Holst of Norway to establish the principle that thoracoplasty should be designed to match selective pneumothorax at its best. In other words, in modern thoracoplasty, the principle of an ideal pneumothorax is followed and this is achieved by combining lateral thoracoplasty with extrafascial apicolysis as devised by Semb. This notable contribution of Semb, the principle of which has now been accepted by many celebrated surgeons, which produces better concentric and selective collapse of the upper lobe of the lung, has been a very important step in the furtherance of thoracoplasty in the present day.

Price Thomas and Cleland have introduced certain minor modifications in the standard Semb thoracoplasty to increase the effectiveness of mobilisation and so improve the results. The mobilised apex in Semb's thoracoplasty has a tendency to expand very quickly pushing up the soft structures. With an idea to prevent this, Semb advocates introduction of extrapleural pneumothorax post-operatively. As this pneumothorax cannot be continued for a certain definite period some surgeons are grafting heterogenous substances such as, polystan plomb or homologous tissues as blood, muscle, bone, etc. Some go so far as to fix the upper two ribs in an inverted position to keep down the lung. This is Overholt's costoversion thoracoplasty.

Semb's thoracoplasty is now practised by most English surgeons, and this has given successful results in about 90 per cent of their cases. American surgeons claim equally good results with total resection of upper 3 ribs with the cartilages. With lateral thoracoplasty, success as reported in the literature, varies from 70 to 75 per cent.

Along with technical improvements, great improvements have occurred in anæsthesia and all these have brought down the mortality rate to within one per cent. This operation is now performed in most places under local anæsthesia which has several advantages over general anæsthesia.

Previously thoracoplasty was performed in unilateral cases of chronic fibrocavernous disease, but now with a better understanding of its indications, it is safely undertaken at a comparatively early stage when the disease has stabilised. The advent of chemotherapeutic agents against *M. tuberculosis* renders a larger number of cases suitable for this measure. Even disease in the contralateral lung is not necessarily a contra-indication for operation. With selective collapse, bilateral operations are now possible.

Due to certain definite advantages specially earlier control of disease, less chance of relapse and less impairment of pulmonary function, primary thoracoplasty is now advocated by many clinicians where pneumothorax would have been done previously. With proper physiotherapy, deformity and functional impairment of the limb on the operated side have been practically eliminated.

Technical improvements, improvements in anæsthesia, chemotherapy, physiotherapy, etc., the result of intensive study and research have steadily expanded the field of application of thoracoplasty which is now considered as one of the most effective collapse therapy measures for lung tuberculosis.

CURRENT MEDICAL LITERATURE

Pressor Amines in Treatment of Shock after Myocardial Infarction

Hellerstein and others (*Am. Heart J.*, **44**: 407, 1952) write that shock accompanying myocardial infarction is associated with a mortality of approximately 80 per cent. There is need for vigorous early treament to restore an effective head of blood pressure. An elevation of blood pressure can be produced by pressor amines and is usually associated with clinical improvement. Fourteen of the eighteen patients emerged from the shock state for a minimum period of two days, and seven were eventually discharged from the hospital. The more favourable results of pressor therapy in comparison to other methods justify further clinical application in the treatment of shock accompanying myocardial infarction.

Pressor amines were administered to eighteen patients in shock accompanying myocardial infarction. Mephentermine (Wyamine), in a preliminary study, was found to be a safe effective pressor substance with little direct effect upoon myocardial irritability in the doses employed. Seventeen patients were treated with mephentermine (three also received ephedrine) and one received ephedrine alone.

A pressor response was produced in sixteen patients. Fourteen emerged from the shock state with marked clinical improvement for more than two days. However, seven succumbed to secondary complications two to twenty-six days later. Seven patients recovered sufficiently to be discharged from the hospital.

Pressor therapy did not produce congestive failure in patients not previously in failure, nor did it aggravate preexisting failure.

The use of pressor amines in the treatment of shock accompanying myocardial infarction appears to rest upon a firm clinical basis.

Problem of Painful Shoulder

Coventry (*J.A.M.A.*, **151**: 177, 1953) gives in the following lines the summary of his observations:

Periarthritis of the shoulder is a manifestation of pain and stiffness in the shoulder of varying degrees and proportions. Three forms can be recognized: pain with minimal stiffness, "frozen shoulder," and the shoulder-hand syndrome. There are many causes for painful shoulder, but the occurrence of periarthritis is dependent on disuse and the presence of periarthritic personality. The sensitivity of the sympathetic nerves to disuse may be peculiar to the periarthritic personality. Reflex sympathetic dystrophy is the probable cause of the stiffness and other changes in the shoulder and hand in periarthritis.

The treatment of periarthritis is directed toward reversal of the disuse syndrome. Any stimulus that can be given the patient to induce use of the shoulder will result in recovery. Of these, cortisone has been found most helpful.

Antacids: Fact and Fancy

Stiegmann (*Am. J. Digest. Dis.*, **19**: 310, 1952) writes that fasting ulcer patients were intubated with a Levine tube and their gastric contents were evacuated. Thereafter, the stomach contents were aspirated at 15 minute intervals until three additional samples were obtained. Then the subjects were given 0·1 mgm. of histamine per 10 kg. of weight, and the aspirations were continued every 15 minutes for another 75 minutes. The next day the procedure was repated, but the subjects were given an antacid by mouth simultaneously with the histamine injection. Twelve groups of antacids, a total of 37 drugs, were studied. Of the purely alkali substances, magnesium hydroxide and Sippy No. 1 powders had the greatest and longest action. Two cellulose substances showed acid neutralizing ability when combined with magnesium oxide, but alone they were only moderately effective. Some of the colloidal aluminium gels had a decided but short and others a moderate and prolonged antacid effect. Combinations of alkali with antisecretory substances were slightly more effective than other antiacids. Some of the amino acid combination had considerable and others only a minor antacid effect. Plant mucin produced a marked and prolonged antacid effect, and the addition of animal mucin increased this effect. Tissue extracts, such as duodenal mucosa extract, had a marked but short antacid effect, while enterogastrone given orally had no effect. Methantheline (banthine) alone had no antacid effect. In keeping with the observation that the alkalis are efficient antacids, some proprietary combinations of alkali and magnesium trisilicate gave good immediate antacid results but also created rebound acidity. Clinical observations in association with the antacid studied indicate that some substances are better tolerated than others and thus produce at times better results, despite the fact that they do not produce complete neutralization of gastric acidity in the laboratory. The authors do not agree that some antacids are greatly superior to others.

Tuberculosis of Larynx

Gilbert and Aronoff (*Arch. Otolaryngol.*, **56**: 435, 1952, Ref. J.A.M.A., **151**: 244, 1953) from analysis of the results obtained in patients with tuberculosis of the larynx treated with streptomycin, p-aminosalicylic acid, or "tibione" (4-acetylaminobenzaldehyde thiosemicarbasone) observe: The 136 patients treated with streptomycin had the greatest percentage of primary healing, the most rapid healing, and the smallest percentage of reactivations. The 21 patients treated with the p-aminosalicylic acid showed less favourable results, while the 20 patients treated with "tibione" showed the poorest results. this drug being almost useless. Healing of a tuberculous larynx usually led to a much-improved general clinical status, despite the absence of change in the roentgenologic picture of the chest. In 13 cases, healing of the larynx allowed the use of endotracheal anesthesia and thus permitted excision of the pulmonary lesion. Clinical studies failed to support the deductions drawn from resistance tests performed solely with the tubercle bacilli found in the sputums. Studies are bejng performed on the tubercle bacilli obtained from the cavities and pleural space after excisional surgery. Two tuberculous larynxes that had been treated with streptomycin were obtained at necropsy. In one case healing by fibrosis had taken place, whereas in the other case streptomycin had failed to effect healing. p-Aminosalicylic acid has no significant toxicity. Streptomycin in doses of 1 gm. a day or less caused neurotoxic symptoms referable to the vestibular system in a small percentage of cases but almost no hearing loss. "Tibione," however seemed more toxic than reported by German investigators.

Neurological Complications Following Antirabies Vaccination

Appelbaum and Nelson (*J.A.M.A.*, **151**: 189, 1953) in giving the summary of the experience in 46 cases of encepalomyelitis following vaccination with rabies virus in

New York City from 1928 to 1951 observe: There were no deaths. The clinical manifestations are described according to the three general types encountered, encephalitic, dorsolumbar myelitic, and neuritic. The spinal fluid was usually clear, with an increase in cells, predominantly lymphocytes. The protein content was generally elevated, the sugar content was normal, and cultures were sterile. There is no specific treatment. The use of cortisone and corticotropin requires further investigation.

The epidemiological features are discussed. The incidence of encephalomyelitis was one accident to 2,025 persons treated in New York City Department of Health Clinics, but it was about five times higher in those who received 14 injections than in those who received 7 or fewer injections. The risk of rabies from a bite is shown to be greater than that of encephalomyelitis from vaccination. Criteria for use of vaccines are given, and avianized vaccine and antirabies serum are discussed.

Penicillin Anaphylaxis

Mayer and others (*J.A.M.A.*, **151**: 351, 1953) in reporting on six cases of acute anaphylactic-like shock due to penicillin hypersensitivity observe:

All six patients had received penicillin hypersensitivity reactions. Intradermal direct skin testing with penicillin gave an immediate wheal type of reaction in two of the three cases in which it was done. In the third patient an almost fatal constitutional reaction developed from the skin test.

The incorporation of penicillin in gums, gargles, and mouth and throat lozenges, its administration for mild illnesses such as the common cold, and the treatment of disease caused by organisms not susceptible to its action, should be condemned.

All patients about to receive penicillin therapy should be interrogated about their past experiences after receiving this drug, and specially as to the possibility of any untoward reactions following its administration. In the event of a positive or questionable history of penicillin hypersensitivity, skin testing with a high dilution of penicillin is indicated. Scratch testing with the material to be administered may be substituted. In the event of a positive immediate skin test penicillin is either contraindicated or is given as a calculated risk warranted by the seriousness of the presenting condition.

Use of Bactericides and Detergents in Chronic Middle Ear Infection

Shute and Horth (*J. Roy. Inst. Pub. Health*, **16**: 74, 1953) summarise their observations as follows:

1. The commonest pathogen in cases of C.S.O.M. is *Ps. pyocyanea*. This organism is insensitive to penicillin, sulphathiazole and a number of other preparations commonly used in otology.

2. Of the substances readily available, merthiolate 1: 1,000, phenol 4 per cent and acetic acid 1 per cent are found to be the most active against *Ps. pyocyanea* and also against *B. proteus*.

3. An antiseptic solution to be used in the ear may be rendered more effective by the addition of a synthetic detergent.

4. Sodium lauryl sulphonate, besides acting as a wetting agent, protects both argyrol and merthiolate from the inhibitory action of serum.

5. This may be related to the ability of kationic detergents to denature proteins.

Fluorine in Human Nutrition

Mitchell and Marjorie (*J. Am. Diet. A.*, **29**: 24, 1953) write that in human nutrition, the physiologic effects of fluorine are largely exerted through the drinking water, though there are some high-fluorine foods that may contribute significant amounts to the day's intake of fluorine, which generally, without undue exposure to fluorine, amounts to 0·3 to 1·5 mgm. per day. At such low levels of consumption little retention occurs, but definite retention may occur at 4 to 5 mgm. fluorine daily and perhaps at lower levels. The fluoride contained in waters carrying 1·0 to 1·5 p.p.m. exerts a beneficial and marked effect in preventing or retarding dental caries (eufluorosis). At higher levels, the effect is harmful (dysfluorosis) leading to severe disturbance of the functions of ameloblasts and of the odontoblasts of the teeth (chronic endemic dental fluorosis, or mottled enamel) and eventually to osteoclerosis and calcification of the ligaments and joint capsules. These changes in the phosphatic tissues of the body are associated with increasing incorporation of fluorine in the bone and tooth substance. However, these effects are noticeable only after many years of exposure. It has been estimated by Machle and by Roholm that daily intakes of about 15 to 20 mgm. fluorine, in the drinking water or in industrial exposure, over a period of several years is required to induce chronic fluorosis in an adult man.

Terramycin in Acute Otitis Media in Children

Mawson and others (*Brit. M. J.*, **1**: 817, 1953) in reporting on a clinical trial of terramycin in the treatment of acute otitis media observe that this antibiotic, at a dose of 50 mgm. per kg. body weight daily for five days, compares favourably with intramuscular procaine penicillin daily for the same period. No real difficulty was encountered in the administration of terramycin. Toxic effects were not observed.

Health of Premature Children

Douglas and Mogford (*Brit. M. J.*, **1**: 748, 1953) write:

676 live-born premature singletons drawn from one week's births in 1946 in 424 maternity and child welfare authorities have been matched with 676 children born at term during the same week and drawn from similar home environments. This paper describes the health and survival of these children during the first four years of their lives.

Apart from unavoidable losses from death and emigration, only eight pairs have fallen out of the inquiry.

The high mortality of premature children extends beyond the first month of life, and between the ages of 1 month and 4 years is largely accounted for by deaths from congenital defects and lower respiratory infections.

During the first two years premature children show a higher incidence of hospital admissions, many of which are for bronchitis and pneumonia. At later ages they are no more likely to be admitted than are children born at term.

Upper and lower respiratory infections, including those treated at home as well as those treated in hospital, are more common among premature children during the first two years. This greater susceptibility to infection is found among premature children even when they are reared in an apparently favourable home environment.

In general, premature children—after they have reached the age of 2—appear to be as healthy as those born at term.

CURRENT TOPIC

I.M.A. ARRANGES RESIDENCY TRAINING ABROAD FOR INDIAN DOCTORS

The Indian Medical Association sent 37 Indian doctors to U.S.A., Canada and Ireland for residency training in different hospitals in 1953. The name of each doctor and the hospital to which he was sent are detailed against each subject of training.

A. Pathology—1. Dr. K. C. Pani (Mysore)—West Jersey Hospital, Camden, New Jersey, U.S.A. 2. Dr. Yash Paul Kapur (Karnal)—The Burlington County Hospital, New Jersey, U.S.A. 3. Dr. R. A. Rajou (Mysore)—Sinai Hospital of Baltimore, Inc., Baltimore, Maryland, U.S.A.

B. Internal Medicine—4. Dr. A. K. N. Sinha (Patna)—Aultman Hospital, Canton, Ohio, U.S.A.

C. Pediatrics—5. Dr. G. V. Rama Row (Madras)—University Hospital, Baltimore, Maryland, U.S.A. 6. Dr. (Mrs.) S. Kapur (Karnal)—Harlem Hospital, New York, U.S.A. 7. Dr. (Mrs.) Usha Sahay (Patna)—Homer G. Phillips Hospital, Saint Louis, Missouri, U.S.A. 8. Dr. P. K. Mukherji (Calcutta)—Meharry Medical College Hospital, Nashville, Tennessee, U.S.A. 9. Dr. K. H. Desai (Bombay)—Meharry Medical College Hospital, Nashville, Tennessee, U.S.A. 10. Dr. N. K. Mitra (Patna)—The Children Mercy Hospital, Kansas City 6, Missouri, U.S.A.

D. General Surgery—11. Dr. S. K. Niyogi (Calcutta)—Aultman Hospital, Canton, Ohio, U.S.A. 12. Dr. B. C. Mahanti (Hirakud, Orissa)—The Woman's Hospital of Philadel, Philadelphia, U.S.A. 13. Dr. K. P. Parameswaran Nair (Trivandrum)—The Burlington County Hospital, Mount Holly, N. Jersey, U.S.A. 14. Dr. Atm Prakash (Lucknow)—Ottawa General Hospital, Ottawa, Ontario, Canada.

E. Orthopedic Surgery—15. Dr. R. N. Mitra (Calcutta)—Alexian Brothers Hospital, Ill., U.S.A. 16. Dr. T. N. Sreenivasiah (Shimoga, Mysore)—St. Charles Hospital and Orthopedic Clinic, Brooklyn, N.Y., U.S.A. 17. Dr. Sailendra Bhattacharyya (Calcutta)—Bone and Joint Hospital, Oklahama City, U.S.A. 18. Dr. S. C. Doss (Jorhat, Assam)—University Hospitals of Cleveland, Ohio, U.S.A. 19. Dr. C. Ramaswamy (Mandapam, S. India)—Robert Packer Hospital, Savre, Pennsylvania, U.S.A. 20. Dr. S. D. Sanwal (Banaras)—Hospital Centre at Orange, Orange, New Jersey, U.S.A.

F. Tuberculosis—21. Dr. V. B. Naidu (Mysore)—The Mountain Sanatorium, Hamilton, Ontario, Canada. 22. Dr. B. R. Rama Rao (Bangalore)—Royal Edward Laurentian Hospital, Montreal, Canada. 23. Dr. R. K. Padhi (Cuttack) and 24. Dr. M. Ramohan Rao (Vizianagram)—Saskatchewan Anti-Tuberculosis League Sanatorium, Saskatoon, Canada.

G. E. N. T.—25. Dr. Sharda Prasad Sinha (Laharia-sarai, Bihar), 26. Dr. T. S. Nath Sinha (Patna), 27. Dr. Murlidhar Sahu (Iamshedpur) and 28. Dr. Harbans Singh (Kanpur)—Royal Victoria Hospital, Montreal, Canada.

H. Obstetrics and Gynaecology—29. Dr. (Miss T. K. Notani (Bikaner)—St. Joseph's Hospital, Baltimore, Md, U.S.A. 30. Dr. (Miss) D. C. Kamala (Mysore)—Suburban Hospital Bethesda, Maryland, U.S.A. 31. Dr. P. A. S. Sahay (Patna)—Aultman Hospital, Canton, Ohio, U.S.A.

I. Psychiatry—32. Dr. T. D. Rana (Navsari)—Warren State Hospital, Warren, Pennsylvania, U.S.A.

J. Mental Diseases—33. Dr. J. Mallik (Calcutta)—Grangegorman Mental Hospital, Dublin, Ireland.

K. Neurology—34. Dr. S. J. Damany (Bombay)—Goldwater Memorial Hospital, New York, U.S.A.

L. Dermatology—35. Dr. D. J. A. Rebello (Bombay)—Massachusetts General Hospital, Boston, U.S.A.

M. Radiology—36. Dr. B. J. Desai (Bombay)—Sinai Hospital of Baltimore, Baltimore, U.S.A.

N. Rotating Internship—37. Dr. (Mrs. A. Z. Qureshy (Hyderabad Dn.)—Harlem Hospital, New York, U.S.A.

* * * *

Seventeen appointments in various hospitals in U.S.A. and Canada were also obtained by the I.M.A. for Indian Doctors but the selected doctors either refused to go or may go later. The different subjects for the study of which posts were secured in different hospitals are detailed below:

A. Pathology—1. Dr. H. V. Pophale (Hyderabad)—Burlington County Hospital, Mount Holly, N. Jersey, U.S.A. 2. Dr. S. Ghosh (Calcutta)—Malden Hospital, Malden, U.S.A. 3. Dr. O. P. Gupta (Jaipur)—Mount Sinai Hospital, Chicago, U.S.A. 4. Dr. S. Sinha (Patna)—Mount Sinai Hospital, Chicago, U.S.A. 5. Dr. Bhagwat Prasad (Patna)—Sinai Hospital of Baltimore, Baltimore, Maryland, U.S.A. 6. Dr. Rameshwar Prasad Singh (Patna)—Sinai Hospital of Baltimore, Baltimore, Maryland, U.S.A. 7. Dr. Puttaraj Urs (Mysore)—Springfield Hospital, Springfield, U.S.A. 8. Dr. J. K. Dutta (Chandbali, Orissa)—Alexian Brothers Hospital, Chicago, U.S.A.

B. Internal Medicine—9. Dr. Jagadish Tripathy (Cuttack) Goldwater Memorial Hospital, New York, U.S.A. 10. Dr. M. V. K. Acharyulu (Hyderabad Dn.)—Alexian Brothers Hospital, Chicago, U.S.A. 11. Dr. M. H. Reddy (Mysore)—Lakewood Hospital, Lakewood, Ohio, U.S.A. 12. Dr. K. M. Misra (Cuttack)—Malden Hospital, Malden, U.S.A.

C. E. N. T.—13. Dr. Chatar Singh Anand (New Delhi) and 14. Dr. J. T. Ramalingam (Mysore)—Both at Royal Victoria Hospital, Montreal, Canada.

D. Obstetrics & Gynaecology—15. Dr. (Miss) Thanevala (Delhi)—U. C. School of Medicine, U. C. Hospital, San Francisco, California, U.S.A. 16. Dr. Arjan Das Amar (Amritsar)—Aultman Hospital, Canton, Ohio, U.S.A.

E. Radiology—17. Dr. Dilip Kumar Singh (Patna)—Burlington County Hospital, Mount Holly, New Jersey, U.S.A.

* * * *

List of doctors whose posts did not materialize or who are still in the waiting list for training in certain subjects:

A. Internal Medicine—1. Dr. D. S. Bisht (Calcutta); 2. Dr. M. Appajee (Mysore).

B. Radiology—3. Dr. V. M. Tarkunde (Delhi).

C. Pediatrics—4. Dr. P. C. Bopaiah (Hassan, Mysore); 5. Dr. B. D. Sinha (Patna).

D. General Surgery—6. Dr. Vikram Marwah (Nagpur); 7. Dr. Sankar Das Sarkar (Calcutta); 8. Dr. A. K. Sircar (Calcutta); 9. Dr. J. C. Chugh (Jullundur).

E. Dermatology—10. Dr. B. S. Krishnamurthy Row (Bangalore).

F. Obstetrics & Gynaecology—11. Dr. (Miss) Kanak Das Gupta (Calcutta), 12. Dr. (Miss) D. Keswani (Bikaner), 13. Dr. (Miss) U. C. Shah (Bombay), 14. Dr. (Miss) R. V. Mirchandani (Bombay). 15. Dr. (Miss) Jogindra Gaind (Khamgaon), 16. Dr. J. N. Foneseca (Bombay).

* * * *

A social function was arranged by the Provincial Branch of I.M.A., Bombay, to meet 24 of the medical men, selected by the I.M.A. for internships in U.S.A., who left Bombay on 20-6-53 by Air India International. On this occasion the president of the Indian Medical Association, Dr. B. V. Mulay, in an inspiring speech gave his advice to these medical graduates. Dr. Mulay said,

"Young friends, on this happy occasion I should remind you of certain responsibilities and obligations, which lie on you and, I am sure, of which you are completely possessed of your own accord.

The venture that the Indian Medical Association have started in sending large batches of graduates for post-graduate training is very important for improving the level of the specialists and practitioners' professional efficiency. Countries like the U.S.A. and U.K., are highly advanced in medical science and as our motherland had lagged behind owing to her long-existing bondage, the scheme of sending such graduates for training will make the most needed and valuable addition to the post-graduate training at present available

in our country. Our specialists and medical teachers are striving their best but have been handicapped by the want of adequate equipment. It is, however, hoped that their efforts will soon win the favour of the present rulers and our teachers will soon be able to absorb in their post-graduate clinics all such graduates, who wish to join for higher training without feeling the necessity of seeking education in a foreign land.

But till then, young friends, there is a special responsibility on you of doing your best for your own sake and for the sake of the patients, for whom you will work and for the hospitals, where you are placed for training. Do not shirk even the simplest and the smallest work—be kind and patient—spare no pains nor efforts in imbibing knowledge, obey your teachers and last but not the least, leave a special stamp of the culture of Bharat behind you, by practising all the best Bharatiya social virtues among the people of U.S.A., with whom you will be associated for a few years.

At this occasion it is not possible to forget Capt. S. C. Sen, our ardent, able and popular Hony. General Secretary, due to whose diplomacy and to the good will he has produced in foreign lands, it has become possible to secure internships of substantial benefit in every respect for the graduates of Indian Medical Association. It is in your hands to keep up the good will, make valuable additions and raise the Indian Medical Association and Bharat high in the eyes of the nationals of U.S.A."

NOTES AND NEWS

DOCTORS APPOINTED MINISTERS OF STATE IN WEST BENGAL

Dr. Amulyadhan Mukharji, Editor, Journal of the Indian Medical Association and Dr. Jiban Ratan Dhar, President, Bongaon Branch, I.M.A., have been appointed Ministers of State from the 6th August, 1953, according to an extraordinary Calcutta Gazette notification issued on 6-8-53.

The Gazette notification states:

"The Governor, on the advice of the Chief Minister, has this day been pleased

(a) To appoint Shri Amulyadhan Mukhopadhyay, one of his ministers, to be a Minister of State in charge of the Medical and Public Health Department, *vice* Dr. Bidhan Chandra Roy, and

(b) To appoint Shri Jiban Ratan Dhar, one of his Ministers, to be a Minister of State in charge of the Jails branch of the Home Department under the Minister in charge of that department."

NAMES ERASED FROM MEDICAL REGISTER

On a complaint received from the Chief Superintendent, Central Telegraph Office, Madras, alleging that Dr. G. Rama Rao, L.M.P. (Mad.), 1913, 41, Venkatesa Gramani street, Chintadripet, issued post-dated medical certificates to the employees of the Postal and Telegraph Department, Madras, and delivered to the officials in advance, the Madras Medical Council, held an enquiry on 22nd December 1952 and found him guilty of infamous conduct in a professional respect and in exercise of the powers conferred on it by section 16 (2) of the Madras Medical Registration Act (Act IV of 1914) the Madras Medical Council directed that the name of Dr. Rama Rao, Gudahad, L.M.P. (Mad.), 1913, son of Sri G. S. Narayana Rao and holder of Registration Certificate No. 2839, dated 20th December 1915, be erased from the Madras Medical Register permanently.

* * * *

Information having been received from the Government alleging that Dr. P. M. Bhaskaran, L.M.P., The Vinayak Cancer and Leprosy Research Institute, Cuddalore, openly advertised in "The Hindu" under the name of the Institute mentioned above regarding the treatment given in the institute and appealing to the public for donations and also openly addressed letters regarding the efficiency of the treatment in the said institute, the Madras Medical Council held an enquiry at the meeting held on 9th March 1953 and found him guilty of infamous conduct in a professional respect, and in exercise of the powers conferred on it by section 16 (2) of the Madras Medical Registration Act (Act IV of 1914), the Madras Medical Council directed that the name of Dr. Bhaskaran, Parapath Madavambath, L.M.P. (Madras), 1938, son of P. K. Anandan and holder of Medical Registration Certificate No. 7861, dated 30th August 1939, be erased from the Madras Medical Registter permanently.

CONTINUATION OF UNICEF RECOMMENDED

The Economic and Social Council on 20th July by a unanimous vote adopted a resolution recommending that the General Assembly continue the United Nations International Children's Emergency Fund which, under its present mandate, is scheduled to work only until the end of 1953.

UNICEF aid, principally in medical supplies and equipment, has amounted so far to the following: India $7,418,000·00, Afghanistan $378,000·00 and Ceylon $538,000·00.

ANTI-TYPHUS CAMPAIGN IN AFGHANISTAN

Typhus is endemic in Afghanistan, and assumes epidemic proportions every year. Mortality is always high, and the transmission of the disease is facilitated by the poor standard of living and overcrowded conditions of a great part of the population. In April, 1951, a tripartite agreement was signed in Kabul between the Government of Afghanistan, the United Nations International Children's Emergency Fund (UNICEF), and WHO, concerning a plan of operations against typhus. The new campaign (a previous one had taken place in 1949) covered the provinces of Kabul and Kandahar; in these two provinces 312,832 persons were dusted with D.D.T., and an additional 70,000 in other provinces, all between the 31st December, 1951, and the 12th March, 1952.

Not a single case of louse-borne typhus occurred in the city of Kandahar during that winter, and only four cases were recorded in the city of Kabul, in spite of the late start of the field operations. In the entire province of Kandahar, where the operations reached the most densely populated centres, only four cases were recorded, three of which had occurred before the beginning of the campaign.

These results confirmed the findings made by the WHO team in the previous year. Under existing conditions, an epidemic of louse-borne typhus can be prevented or controlled by systematic delousing of the population with 10 per cent D.D.T. powder. One dusting with this preparation of the entire population at the beginning of the winter, conducted under proper supervision, will afford reliable protection.

CORRESPONDENCE

The Editor is not responsible for any views expressed by the contributors

THE RADIOLOGY BILL AND DR. R. F. SETHNA'S CRITICISM OF THE I.M.A. RESOLUTION

SIR,—My attention has been drawn to an Editorial on the "Proposed Radiology Act" by Dr. R. F. Sethna, Honorary General Secretary, Indian Radiological Association, in the last February number of the *Indian Journal of Radiology*.

I am rather surprised that Dr. Sethna should have characterized the discussion, which took place at the Working Committee, Central Council and the Conference of the Indian Medical Association, held at Patna, in December last year, as "Loose Talk". He has also deplored that the Bengal Branch of the Indian Radiological Association should have concurred with the view of the Indian Medical Association, in declaring that the Bill is wholly unnecessary, as it encroaches on the fundamental rights of medical men to practise in any branch of Medical Science to which he has liking. He has also stated that the members of the Working Committee and the Central Council of the Indian Medical Association have passed the resolution condemning the Bill, without having had an occasion even to study the Bill. He further criticises the Indian Medical Association that it has not paid any attention to problems facing various Specialists' Associations and that it has made no attempts to create "Specialists' Sections" to advise them.

It is not the fault of the Indian Medical Association, if the specialists choose to form separate Associations of their own without consulting the Indian Medical Association as to the advisability of doing so. The Indian Medical Association is a body in which not only General Medical Practitioners but also Specialists are members. If the Specialists so desired to form different sections of their own, the Indian Medical Association would not have raised any objection but would have heartily agreed to arrange for sectional meetings, as in the B.M.A. and A.M.A.

But the causes for fissiparous tendencies have to be traced to the separatist-mentality and superiority-complex of the Specialists themselves.

Dr. Sethna has misrepresented that the members of the Indian Medical Association, who attended the Patna Conference, had no previous opportunity to study the Bill, even though he was fully aware that the Reception Committee had published along with the "Souvenir", Capt. P. B. Mukerji's criticisms on the Draft Radiology Bill. Every member, therefore, had gone through this pamphlet before he gave his considered opinion on the proposed Bill. It does not, therefore, become of Dr. Sethna to doubt the ability of the very large majority of the brother members of the profession to come to correct conclusions, because the resolution which he sponsored was defeated by an overwhelming majority. It is highly improper on his part to pass judgment on the Conference members, as a whole, that their decision was "Hasty, Destructive and Retrograde".

Moreover, it is unfortunate that Dr. Sethna should have expressed his condemnation of the action of the Indian Medical Association in the pages of the *Journal of Radiology* when the *Journal of the Indian Medical Association* was open to him for the expression of his viewpoints. His conduct in publishing in another Journal, condemning the action of the Indian Medical Association, of which body he happens to be a member, should be viewed as an act of disloyalty to the Association to which he belongs. At least, he could have had the grace to publish Capt. P. B. Mukerji's paper along with his own 'Editorial' in the same issue of the *Journal of Radiology*.

In this connection I may point out in sharp contrast what Dr. U. B. Narayan Rao did when the resolution on the "Double Shift System of Education in the Medical Colleges", which he sponsored was negatived by the Indian Medical Association. He, as a loyal member of the Association, expressed his own views in the correspondence column of the *Journal of the Indian Medical Association*. Dr. Sethna should have done likewise.

Dr. Sethna was present at the meetings of both the Working Committee and the Central Council held at Patna; and I, as Chairman of both these meetings, gave Dr. Sethna full scope to present views on the proposed Radiology Bill. He availed of the opportunity fully, spoke at length on the provisions of the Bill and moved a resolution supporting the same. If after hearing his views, the members of those two bodies did not see eye to eye with him on the necessity of the proposed Radiology Act and when, subsequently, the Conference, as a whole, passed a resolution condemning the provisions of the Draft Bill, Dr. Sethna should have refrained from using undignified language against the Indian Medical Association and its members. It is my duty, as the Past President of the Indian Medical Association, to uphold the dignity of the Association and the honour of its members. I am, etc.,

T. S. TIRUMURTI,
Madras, 8-8-1953. B.A., M.B., C.M., D.T.M. & H.

CLOSING DOWN CONDENSED M.B.B.S. COURSE

SIR,—Licentiates are joining the I.M.A. in increasing numbers. But in the profession the position of licentiates is below that of graduates. They (licentiates) are not recognised by the Indian Medical Council. They are not allowed to undergo any post-graduate training in the Universities. They are not fit for promotion to higher service and so on. So the starting of condensed M.B.B.S. course gave them a chance of removing their inferior stamp. Now the Indian Medical Council has resolved to close down the course in 1956. Is it believable that in the meantime even a fraction of the licentiates has been given a chance to join the course? If not, why this hurried closing down? It is necessary that the members of the I.M.A. who are also members of the I.M.C. should immediately take up the matter and stop the closing down of the condensed course until all the aspiring licentiates get a chance of joining it. I am, etc.,

Agarpara, 28-7-53. R. K. SARMA BISWAS.

CIRCULATION AND USE OF SPURIOUS DRUGS

SIR,—It is said that Kabaries purchase empty phials of Streptomycin, Penicillin, Colloid Calcium and other popular medicines at fancy prices and send them to Delhi and other places which are said to be the manufacturing centres of spurious medicines. Recently a news item was published in some daily papers of the country throwing light on the nefarious activities of these people and some of them were arrested with stocks of faked labels.

I would request the medical profession through your journal to see that all empty bottles of injections and patent medicines are destroyed in their presence.

Let this be the first step of our efforts and when it materialises, we will pursue the matter further till this evil is eradicated. I am, etc.

Dehra Dun.

JAGMOHAN SINGH,
B.SC., M.B., B.S.,
Hony. Secretary,
I.M.A., Dehra Dun Branch.

COMBINATION OF INJECTABLE DRUGS

SIR,—Of late several pharmaceutical companies are marketing injectables with various combinations of drugs, e.g., calcium gluconate with vitamin C; calcium gluconate with vitamin B; liver extract with vitamin B complex and folic acid and vitamin B_{12} and vitamin C; emetine hydrochloride with strychnine hydrochloride and thiamine hydrochloride; normal saline with vitamin B complex factors in pound bottles for I. V. transfusion.

Several practitioners mix in their syringes before use insulin with vitamin B_1 in diabetes; (b) quinine bihydrochlor with glucose and coramine for I. V. injection in cerebral malaria; (c) procaine penicillin with milk protein where non-specific protein therapy as well as penicillin are indicated.

I pray that you publish articles in your magazine written by senior physicians in co-operation with pharmacologists on the suitability and the desirability of similar combinations of injectables.

In this connection I desire that they comment on the correctness or otherwise of administering simultaneously several drugs to an individual patient, e.g., penicillin and di-hydro streptomycin injection intramuscularly; Necacyl intravenously; P.A.S. and I.N.H. tablets orally in a case of tuberculosis; I. V. quinine and I. M. mepacrine; and if the patient can swallow Camoquine (P.D.Co.) or Nivaquine (M&B) orally, etc. in cerebral malaria. I am, etc.,

Takkali.

M. V. RAMA RAO,
M.B.B.S.

[This letter was forwarded to Dr. B. Mukerji, Director, Central Drug Research Institute for expert opinion. Dr. Mukerji's observations are printed below for information of our readers.—ED.]

* * * *

With reference to the letter by Dr. M. V. Rama Rao sent to me for my opinion, a reply to some of the queries regarding the suitability or otherwise of certain combinations of drugs mentioned therein is submitted herewith.

As regards the combination of Liver Extract with Vitamins B Complex and C, it is recommended because the two vitamins are essential for normal erthropoiesis, and also exert a synergistic action with that of liver factors. The combination is specially effective in the treatment of different megaloblastic anæmias. In addition to this the activity of liver extract depends on its content of vitamin B_{12} and folic acid. It is well known that B_{12} and folic acid are two essential basic factors for normal erythropoiesis, and are also found to exert a synergistic action with each other. Moreover, in most cases of megaloblastic anæmias there is a dual deficiency of these factors. Therefore, their use in combination is recommended in the treatment of such anæmias either with or without liver extract. Prolonged use of folic acid is contra-indicated in Addisonian pernicious anæmia as it may lead to posterolateral column disease.

Regarding the combination of Calcium Gluconate with Vitamin C, it is to be noted that the pharmacodynamic actions of the two partly overlap each other as far as their anti-hæmorrhagic property and their role in proper development of bone, teeth and cartilage is concerned. But the claim that they make a powerful combination against infections is not well supported, although there is evidence that Vitamin C requirement is increased in infections like pneumoniæ, rheumatic fever, rheumatoid arthritis, tuberculosis, etc.

Similarly, the combination of Vitamin B, with Insulin is ineffective in diabetes as it is well known that B_1 has no effect on the levels of blood sugar in normal persons as well as diabetic patients. Its deficiency in the causation of the diabetic neuropathy has also been denied. Thus, it is concluded that the combined administration of B_1 and Insulin is of no use, except where there is a clinical indication of vitamin B_1 deficiency in diabetic patients but apart from the diabetic neuropathy itself, there its use may be advocated.

In cerebral malaria, oral administration of quinine is not practicable as the patient cannot swallow. In that case Quinine bihydrochlor has to be given intravenously, but should be dissolved in large quantities of saline or glucose in order to check any slowing of heart or fall in blood pressure, and subsequent collapse. For the same reasons, coramine should also be mixed in the same fluids. By this procedure the I.V. administration of quinine becomes safer.

Penicillin and Streptomycin are at present administered together intramuscularly and the combination appears to be quite satisfactory. Penicillin acts on Gram-positive bacilli and Streptomycin on Gram-negative bacilli. The combined use of the two antibiotics widens up the field for antibacterial activity, and the combination is specially effective in such mixed infections as are found in subacute bacterial endocarditis, peritonitis, purulent meningitis, etc. The advantage is that in combination the two antibiotics act as coadjutants to each other, thus comparatively smaller doses of the antibiotics might be required. Moreover, by the combined administration the development of the so called 'Microbial Resistance' is checked. An important point is that the antibiotics must be combined at the beginning of injection and not after one or the other used singly failed to control the infection.

Similarly in the treatment of tuberculosis if Isonicotinic Hydrazide (I.N.H.) is employed it must be combined with either P.A.S. or Streptomycin or both, otherwise if administered singly it leads to the development of I.N.H.-resistant tubercle bacilli. Moreover, I.N.H. is reported to be a toxic drug. In view of toxicity of I.N.H. and uncertainty about control of I.N.H.-resistant bacilli, the treatment of choice is still Streptomycin I.M. and P.A.S. by mouth several times a day in most patients of tuberculosis. Yours, etc.,

Chattar Manzil Palace
Lucknow
31-7-53

B. MUKERJI,
Director,
Central Drug Research Institute.

REVIEWS

THE MEDICAL ANNUAL, 1953—Edited by Sir Henry Tidy, K.B.E., M.A., M.D. (OXON.), F.R.C.P. AND A. Rendle Short, M.D., B.S, B.SC., F.R.C.S. John Wright and Sons, Ltd., Bristol, U. K. Pp. xl-532-35; 29 illustrations and 72 plates. Price 27s. 6d., postage 1s. 2d.

The Medical Annual has built up an unparalleled reputation through the previous seventy years of its publication, the present one being the seventy-first one. Compared to its predecessor, this year's volume has become fatter, mainly because of increased number of pages in the text. A very pleasant change in this volume is a new variety of slightly bigger type face used throughout the text which takes off all load of eye-strain. The developments and advances in the field of medicine through 1952 have been admirably surveyed by the band of 44 contributors and ably edited by the two veteran editors. The subject matter is drawn from all the branches of the healing art—the curative, the preventive and also the medicolegal aspects. There is an interesting article on "Medicine in the Reign of Elizabeth I" by Dr. Charles Singer, which will be appreciated by readers interested in the history of medicine. The well known cover-design has been slightly altered, and it appears to have improved thereby. Paper, printing, the reproduction of the 72 plates and binding are all in keeping with the fine tradition of the publishers. Like the previous ones, the present volume of the Medical Annual is a *must* to be kept on the table of all practitioners who want to keep abreast of times.

NEW CONCEPTS OF HYPNOSIS, as an adjunct to psychotherapy and medicine—By Bernard C. Gindes, M.D. Introduction by Dr. Robert M. Lindner. Published by George Allen and Unwin Ltd., Ruskin House, 40 Museum Street, London W.C.1, on 19th February 1953. Pp. 272, price 15s. net.

The induction of sleep, the art of hypnotism, appears to have been used by isolated members of the medical fraternity from very ancient times. Evidences of this are found in very old writings and engravings going back to about one thousand years, B.C., or perhaps more. Perhaps it was Mesmer who first tried to put hypnotism on a scientific footing when he presented his thesis to the Faculty of Medicine in the University of Vienna in 1773. Induction of sleep for the treatment of diverse physical and mental ailments has since been practised in many countries; but this has mainly been in the hands of uneducated or half-educated "quack doctors." Extensive observations and laborious researches have lately been undertaken which are trying to bring about a modern orientation in hypnotherapy and thus place hypnosis on a firm footing as a modern therapeutic agent. The modern age has brought about an increasing awareness amongst the psychiatrists of the dynamic nature of all therapeutic processes and hence it appears that before long the instrument of hypnotism would be included within the scope of psychotherapeutics to be used as a medico-psychological adjuvant of tested and proven stability. The present book by Dr. Gindes is an admirable book on the subject wherein the author conveys his findings on hypnotism through serious scientific research and clinical observation. Throughout the book, the author pointedly shows the distinction between the use of hypnosis as a *method* and hypnosis as a *condition*, the latter being the more desirable scientific process for carrying on psycho-analysis and also to help in bringing about a cure rather than a temporary improvement. Dr. Gindes forcefully correlates hypnotherapy directly to psychoanalysis. This is a book of absorbing study to all who have an interest in scientific hypnotism as a help-maid to modern scientific medicine.

MEDICINE—By A. E. Clark-Kennedy, M.D., F.R.C.P., Volume one—The Patient and his Disease. Second edition, 1953. E. & S. Livingstone Ltd. 16-17. Teviot Place, Edinburgh, U.K. Pp. xiv+410; price 25s. net., registered postage 1s. 7d.

With the growth of knowledge and the accumulation of experience Medicine has to-day undoubtedly become a very big subject and also very varied, owing to the newer and newer specialisations subdividing the whole subject matter further and further. The present day medical education is developing alongside hospital organisation and requires the student to systematically pass through a succession of special departments, without often having a chance for proper correlation of his specialised teachings or even of his own experiences. The text-books have also generally come to follow this trend, being very often a compilation of writings of individual members of a panel of authors—rather than the exposition of the accumulated knowledge and wisdom of one eminent person, as in olden days. This modern development has both its usefulness and drawbacks. Due to this too much of splitting of departmental teachings in the present day medical education, principles are often crowded out or buried under the sheer weight of accumulated facts. The present book is written with the intention of breaking through this too much compartmentalism and with an idea to correlate the facts and make the reader think in terms of an intact and whole subject rather than a "case" of a "disease". This volume one makes a very interesting reading and will render a great deal of help to the students and practitioners in understanding the patient as a whole, as he actually presents himself, by a correlation of the data and facts about the body and the mind afflicted with the disease; thus helping the reader to arrive at a rational outlook.

RHEUMATIC FEVER, a Symposium—Edited by Dr. Lewis Thomas, M.D. Published by University of Minnesota Press, Minneapolis, U.S.A., 1952. Pp. 349, price $10.00. Agents in India, Pakistan, Burma and Ceylon—Oxford University Press, Mercantile Buildings, Lall Bazar, Calcutta 1.

Sponsored by the Minnesota Heart Association, a symposium on Rheumatic Fever was held at the University of Minnesota on November 29, 30 and December 1, 1951. A grant from this organisation had made possible the holding of the symposium as well as the publication of the present volume under the editorship of Dr. Thomas, the American Legion Memorial Heart Research Professor in the department of pediatrics and medicine at the University of Minnesota. Rheumatic fever is, even to-day, a very serious disease in children and young adults with the majority of first attacks before the age of twenty-five. The symposium brought together from various parts of the country a representative group of investigators who have made important contributions to the various aspects of study of Rheumatic Fever. The symposium was divided into five sessions, each dealing with a group of related subjects. This book consists of the twenty-three papers and discussions presented at the conference and representing the work of more than forty investigators and practitioners in the field of rheumatic fever and rheumatic heart disease. The problem studied from every important point of view was presented at the symposium.

Paper, printing, get up and binding of the book are very good. Everyone in the medical sciences whether engaged in research or in active practice—as a general practitioner or as a specialist in this field, and also every teacher of medicine will find this book a very useful compendium containing a forceful exposition of the various problems connected with rheumatic fever.

THE CONCEPTION OF DISEASE, ITS HISTORY, ITS VERSIONS AND ITS NATURE—By Walther Riese, M.D. The Philosophical Library, 15 East 40th Street, New York, 16, N.Y., U.S.A., 1953. Pp. 120. Price $3·75.

Disease has afflicted mankind from very early period of man's existence on the face of the earth. In fact disease is a basic experience of human existence. But it is interesting, and often revealing, to study the various concepts of disease that have held the field through various phases of development and evolution of civilisation in the countries of the world. It will then be very often found that a given concept of a disease has changed, progressed and been modified *pari passu* the changes in the knowledge and civilisation in the human history prevalent at the time. The author has been affiliated with the Medical Faculties in several reputable Universities of various countries and is at present on the staff of several teaching hospitals in U.S.A. The author has attempted to set forth the changing concepts of disease along with the changing panorama of the then civilisation; by analysing the various concepts in their original setting —in a chronological order as far as possible. The book makes interesting reading and should be read by all concerned in the teaching of modern scientific medicine and also by those who desire to get an insight into the history of the art and science of medicine.

PULMONARY TUBERCULOSIS. A HANDBOOK FOR STUDENTS AND PRACTITIONERS—By R. Y. Keers, M.D., F.R.C.P.(EDIN.), F.R.F.P.S.(GLAS.), F.R.S.E. and B. G. Rigden, M.R.C.S.(ENG.), L.R.C.P.(LOND.); with a new foreword by F. H. Young, O.B.E., M.D.(CAMB.), F.R.C.P.(LOND.), D.P.H. Third edition, 1953. E. & S. Livingstone Ltd., 16 & 17 Teviot Place, Edinburgh, U.K., Pp. 324; price 24 s. net, postage 1s. 6d.

Pulmonary tuberculosis is a vast subject and volumes can be, and actually are, written on this. These are all very well for the workers and specialists in this special field of work. But the undergraduate student and the general practitioner naturally find themselves in the deep sea when faced with such voluminous literature. But nevertheless they must need to have a comprehensive workable idea about this disease, cases of which crop up before them every day. The present volume is an excellent handbook which would help the student and the general practitioner in meeting, understanding and managing his patient with pulmonary tuberculosis. Extensively detailed discussions have naturally to be omitted in a "handbook" but, it may be said to the credit of the authors that they have been able to effect a judicious combination of clarity with brevity. Short but useful accounts of pathology have been given, differential diagnosis considered in good detail and chapters on treatment, though brief, are up to date and accurate. Paper, printing and reproduction of the selected skiagrams are good. Should prove a very useful handbook to those for whom it has been intended.

OPERATIVE NEUROSURGERY with emphasis on Procedures in Trauma—By Elisha Stephen Gurdjian, M.D. and John E. Webster, M.D. The Williams & Wilkins Company, Baltimore, 1952. Pp. xiv-442 with 129 Plates. Price 76s. 6d. Bailliere, Tindall & Cox, 7 and 8 Henrietta Street, London W.C.2.

Neurosurgery is a comparatively recent speciality, but even then, through the enthusiasm and zeal of several workers in this field, it has advanced steadily and the present day achievements are worthy of compliments. The authors of this volume not only have had extensive experience with the operative procedures described, but they have dissected out most of them in the anatomical laboratory. The authors cover almost the whole field of neurosurgery in this book, the text being divided up into four parts—head, spine, sympathetic nervous system and the peripheral nerves. Throughout the book, the authors have laid emphasis on traumatic procedures in neurosurgery. This is a practical book and hence a comparatively small amount of space has been devoted to diagnosis, the bulk of the reading matter naturally dealing with the various techniques of operation. A special feature of the book is that the text and illustrations have been usefully planned to display the diagrams and other illustrations of pertinent anatomical informations along with the various operative procedures. The anatomical summaries given in the text will be of much help to the reader who thus gets all the relevant informations pertaining to an operative procedure—all condensed in one place. The authors have described standard procedures in this book leaving aside special techniques evolved by individual surgeons. The illustrations are an integral part of the text and render great help both to the authors and to the readers. Produced in art paper throughout, this is an excellent book on the subject and should prove of great use to all surgeons doing neurosurgical work.

SPORT AND HEALTH. International Conference on Sport and Health, Oslo, Norway, 1952—Published by the Royal Norwegian Ministry of Education, State Office for Sport and Youth Work.

In recent years, there has been a growing tendency in several countries to employ sport more systematically, as part of the preventive and constructive health service, and to regard physical training as a means of increasing the individual working capacity. After a good deal of preliminary work and Joint Committee meetings of the Nordic Sports Federation, in 1946 and 1949, the Norwegian Sports Federation moved their Government and ultimately it was possible to induce the WHO to include physical training in their working programme. In connection with the VI Olympic Winter Games held in Oslo, Norway, on 25th and 26th February 1952 was also planned an International Conference on Sport and Health with co-operation between the WHO, the "Fédération Internationale Médicine Sportive" (FIMS) and the Norwegian Government. This International Conference on Sport and Health was a great success and it confirmed that "types of sport which ask for collective participation and teamwork should be encouraged, if necessary at the cost of producing individual *stars*". The present volume is a handy publication summarising the work of the Conference, containing both the lectures actually read and also others which could not actually be read for certain circumstances. To meet the situation, the editor has in some cases been obliged to include only the extracts of some of these lectures.

The book, though a handy volume, nevertheless runs up to 200 pages, full of articles and other informations of great value specially to those doctors, sports organisations and governments who have to take care of young people, help and protect them and thus encourage sound sport. This little book contains the substance of the great fund of informations, thoughts and ideas elicited and focussed at the said International Conference.

LOCAL ANALGESIA: ABDOMINAL SURGERY—By R. R. Macintosh, M.A., D.M., F.R.C.S.(EDIN.), D.A. and R. Bryce Smith, M.A., B.M., B.CH., D.A. E. & S. Livingstone Ltd. Edinburgh & London, 1953. Pp. 94; Price 22s. 6d. net; regd. postage (India) 1s. 2d.

The use of curare and other muscle relaxant drugs is nowadays replacing the methods of local analgesia in abdominal surgery, but the authors of this excellent monograph point out that local analgesia still has its place in abdominal surgery and in the treatment and diagnosis of many diseases. The different drugs used are dealt with one after another. The rapidly acting recent drug, Xylocaine has been included. The anatomy is nicely described with illustrations, some of which are coloured. The various techniques of blocking nerves of the abdomen have been described in detail for practical use. The blocking of cœliac plexus by posterior route of Kappis has been described and the technique of lumbar sympathetic block for therapeutic and diagnostic purposes is given in detail. It is a valuable book for both surgeons and anæsthesiologists.

SEX, SOCIETY AND THE INDIVIDUAL—Edited by A. P. Pillay, O.B.E., M.B., B.S., Bombay, and Albert Ellis, PH.D., New York. Published on 1st May 1953 by The International Journal of Sexology, Whiteaway Building, Bombay 1, India. Pp. x-448; price Rs. 20/-.

"Sexology" is still struggling to establish itself as a specialised ethical scientific subject of study. The devotees of this subject seem however to have an uphill task still ahead of them. This book comprises of selected papers, revised and brought up to date since their original publication in the magazine *Marriage Hygiene* (1934-37) and The *International Journal of Sexology* (1947-52). Forty-five papers are included in this book written by contributors drawn from various countries. Most of these articles represent the conclusions, inferences and advices drawn from the experiences of the respective authors; and hence may not often be agreeable or acceptable to others. The book contains valuable material which may be commended for serious study by family physicians, sociologists, psychiatrists, lawyers and for workers who have to deal with various aspects of child delinquency. In the hands of such thinking persons the contents of the book will stimulate further thoughts abouts healthy measures to deal with various problems connected with sex; but, it is naturally to be feared that adverse effects may be produced should the book fall in the hands of the unworthy.

TRANSACTIONS OF THE ASSOCIATION OF LIFE INSURANCE MEDICAL DIRECTORS OF AMERICA—Sixty-first Annual Meeting (October 1952). Vol. XXXVI. 1953—Edited by James R. Gudger, M.D.

The Association of Life Insurance Medical Directors of America is an important organization doing very useful work since its beginning in 1889. A long chain of officers have guided its activities as Presidents, Vice-Presidents and Secretaries. The Sixty-first Annual Meeting of the Association was held at Los Angeles, California on October 21-23, 1952 with Dr. Linford H. Lee, M.D., as the President. A total of 232 delegates attended the sessions of the conference and a large number of subjects were discussed by several authorities competent to deal with them. Of special note amongst these are "Problems of Borderline Cardiovascular Disease States" by George C. Griffith, "Prolonged P-R interval in Apparently Healthy People" by Francis A. L. Mathewson, "Syncope, Vertigo and Dizziness" by Robert H. Williams, "Prognosis in Latent Syphilis" by Charles W. Barnett and "The Muscular Atrophies" by John B. Doyle. The papers were followed by lively discussions by members present, giving their own observations on the various problems discussed. It appears that the Association had a very successful session at its Sixty-first meeting, and the Transactions embody the important deliberations gone through. This book should be on the table of medical men doing extensive life insurance work and must specially be read by the medical directors of similar companies operating in this country.

TRICHLORETHYLENE ANÆSTHESIA—By Gordon Ostlere, M.A., M.B., B.CHIR., D.A. E. & S. Livingstone Ltd. Edinburgh & London, 1953. Pp. vii+83, Price 7s. 6d. net, postage extra.

This little book is an excellent collection of all that has been said and written about trichlorethylene. The author has dealt with in detail the history, pharmacology and its clinical uses in anæsthesia and analgesia. This book will serve as a valuable guide to the anæsthesiologists and it is a good source for references about the literature on trichlorethylene.

RORSCHACHIANA. INTERNATIONAL REVIEW OF RORSCHACH AND OTHER PROJECTIVE TECHNIQUES—Hans Huber Publisher, Berne and Stuttgart. Sole distributors for the U. S. A.: Grune and Stratton, New York. Published quarterly, 4 copies form one volume of at least 320 pages. Yearly subscription s Fr 30, single number s Fr. 8.

The first International Rorschach Congress voted to found an International Society for Rorschach and other projective methods and a journal corresponding to the Society's aims. The new "Rorschachiana" are intended to provide an international forum for research in personality, assisting in the exchange of facts and theories between serious investigators of all lands and schools. The foremost place is accorded in this journal to the Rorschach as being the eldest, best studied and best validated of all projective methods.

MEDICAL AND BIOLOGICAL ILLUSTRATION—Illustrated quarterly journal, published by the British Medical Association, Tavistock Square, London W.C.1. Edited by a board of editors including the Editor of the British Medical Journal and headed by P. Hansell, Esq. Subscription £2 2s. per annum, post paid, single copies; 12s. 6d. each, plus postage.

The first volume of this excellent journal was published in 1951 and consisted of four numbers, January, April, July and October. The journal is a very useful one to all medical teachers and authors of original articles as well as to artists, photographers and others who help in many ways. Each number has several interesting articles on varied subjects. This journal should be in the library of all medical institutions engaged in teaching and research work.

SUPPLEMENT

Journal of the Indian Medical Association

VOL. XXII, NO. 12 CALCUTTA SEPTEMBER, 1953

ASSOCIATION NOTES

I. M. A. WORKING COMMITTEE—Proceedings of the 47th meeting of the Indian Medical Association held at Calcutta (in the premises of the I.M.A. Calcutta Branch) on 30th April, 1st and 2nd May, 1953.

(SUBJECT TO CONFIRMATION)

MEMBERS PRESENT: (*a*) *Ex-officio members*: 1. Dr. B. V. Mulay (Sholapur), President (in the chair); 2. Dr. S. C. Sen (New Delhi), Honorary General Secretary; 3. Dr. C. S. Thakkar (Bombay), Senior Vice-President; 4. Dr. A. P. Mittra (New Delhi), Honorary Joint Secretary; 5. Dr. S. N. Mitter (New Delhi), Honorary Joint Secretary; 6. Dr. R. Sinha (Calcutta), Honorary Joint Secretary; 7. Dr. A. D. Mukharji (Calcutta), Editor, Journal, I. M. A.

(*b*) *Representatives from Provincial Branches*: 8. Dr. P. C. Duarah, Assam Provincial Branch; 9. Dr. T. Chidanandam, 10. Dr. (Capt.) V. Anantharama Sastry, Andhra Provincial Branch; 11. Dr. P. K. Chatterjee, 12. Dr. N. Bhattacharjee, 13. Dr. A. C. Ukil, 14. Dr. B. K. Ghosh, Bengal Provincial Branch; 15. Dr. U. B. Narayan Rao, Bombay Provincial Branch; 16. Dr. Damodar Prasad, 17. Dr. P. N. Sinha, 18. Dr. S. Samaddar, Bihar Provincial Branch; 19. Dr. S. P. Bhacca, Gujarat and Saurashtra Provincial Branch; 20. Dr. B. K. Vinchure, Madhya Pradesh Provincial Branch; 21. Dr. F. C. Shori, Punjab State Branch; 22. Dr. P. A. S. Raghavan, 23. Lt.-Col. T. S. Shastry, South Indian Provincial Branch; 24. Dr. Amar Nath Ghei, Madhya Bharat Provincial Branch; 25. Dr. (Capt.) H. N. Shivapuri, 26. Dr. S. N. Saxena, U. P. State Branch; 27. Dr. M. Kothandaram, Mysore Provincial Branch.

(*c*) *Co-opted members*: 28. Dr. P. B. Mukerji (Calcutta); 29. Dr. A. K. Bose (Calcutta).

(*d*) *Invited members*: 30. Dr. P. K. Guha (Calcutta); 31. Dr. K. K. Sengupta (Calcutta); 32. Dr. A. K. Paul (Calcutta); 33. Dr. B. N. Ghosh (Calcutta).

Dr. B. V. Mulay, President of the Indian Medical Association, was in the chair.

1. *CONDOLENCE RESOLUTION*:

The following condolence resolution was unanimously passed, all members standing and observing silence for one minute:—

"This meeting of the Working Committee of the Indian Medical Association places on record its deep sense of sorrow at the sad demise of the following members of the Association and conveys its heartfelt sympathy to the members of the bereaved families:—

1. Dr. A. K. Sen (Calcutta); 2. Dr. K. S. Bhandary (South Kanara Branch); 3. Dr. C. V. E. E. Kambara Mudaliar (Chingleput); 4. Dr. (Capt.) T. C. Gopalan (Madras); 5. Dr. N. C. Banerji (Dhanbad); 6. Dr. G. P. Raghaviah (Madras); 7. Dr. G. S. Katre (Madras); 8. Dr. (Major) M. A. Nair (Madras); 9. Dr. H. L. Vaidya (Bhavnagar); 10. Dr. H. S. Rao (South Kanara Branch); 11. Dr. P. B. Chitanand (Sholapur); 12. Dr. (Capt.) P. L. Bannerji (Faizabad); 13. Dr. R. K. Narasinha Moorthy (Davangere); 14. Dr. A. I. Simon (Cochin); 15. Dr. R. Ramachandra Rao (Coimbatore); 16. Dr. (Capt.) A. F. Gomez (Mhow); 17. Dr. K. R. P. Chidambaram (Malabar); 18. Dr. P. S. Subramanya Iyer (Malabar); 19. Dr. K. Pratap (Coimbatore); 20. Dr. Jagadish Chandra Dutta (Cuttack); 21. Dr. A. D. Mastakar (Bombay).

2. *MESSAGES OF INABILITY TO ATTEND THE MEETING*:

Messages of inability to attend the meeting received from the following members were read:—

1. Dr. C. S. Patel (Bombay); 2. Dr. K. C. Nambiar (Madras); 3. Dr. Chamanlal M. Mehta (Bombay), co-opted; 4. Dr. G. V. Hanumantha Rao (Guntur); 5. Dr. P. Veerish Choudhary (Guntur); 6. Dr. R. A. Bhagwat (Indore); 7. Dr. C. O. Karunakaran (Trivandrum); 8. Dr. B. Siddappa (Davangere); 9. Dr. J. Mojumdar (Calcutta); 10. Dr. D. V. Venkappa (Madras), co-opted; 11. Dr. T. S. Tirumurti (Calcutta); 12. Dr. B. L. Kapoor (Ludhiana); 13. Dr. D. G. Ojha (Bikaner); 14. Dr. G. S. Melkote (Hyderabad-Deccan); 15. Dr. H. R. Dawar (Delhi); 16. Dr. Jivraj N. Mehta (Bombay) co-opted; 17. Dr. B. Barua (Gauhati) co-opted.

3. *CONFIRMATION OF THE PROCEEDINGS OF THE LAST MEETING OF THE WORKING COMMITTEE HELD AT PATNA ON THE 21ST AND 22ND DECEMBER*, 1952.

The Proceedings of the 46th Meeting of the Working Committee held at Patna on 21st and 22nd December, 1952 were duly confirmed. (Proposed by Dr. A. C. Ukil, seconded by Capt. H. N. Shivapuri).

4. *BUSINESS ARISING OUT OF THE PROCEEDINGS OF THE LAST MEETING*:

(1) *Revision of scale of fees for examination of Life Insurance cases*:

It was noted that at the last meeting, Drs. C. S. Thakkar and Chamanlal M. Mehta had been requested to pursue the matter further. There was nothing fresh to report. Further developments, if any, would be brought to the notice of the Working Committee in due course. The Working Committee approved of the suggestion of Capt. P. B. Mukerji that since the President of the Insurance Companies' Association was resident in Calcutta, Drs. Mehta and Thakkar might seek the help of a Calcutta member in carrying on further correspondence and meetings on the subject.

(2) *System of appointment of Honorary Medical Officers*:

It was noted that the draft report on the subject which had also been circulated to the members, had now been considered on the previous day by the Joint Scientific, Educational and Health Services Committee and its report would be presented for consideration at the next meeting of the Working Committee.

(3) *Health Ministers' Conference and the Scheme for training of village Vaidyas*:

This subject had also been considered by the Joint Scientific, Educational and Health Services Committee and the recommendations would be presented for consideration at the next meeting of the Working Committee.

(4) *Refusal of Indian Railways to accept Medical Certificates issued by private medical practitioners to Railway employees*:

Dr. Mulay, who had been requested at a previous meeting to pursue the matter, said that now with regrouping of Railways and due to introduction of the new Railway Zones, it had become almost impossible to continue contact with the authorities with whom he had been corresponding—due to transfer of officers and changes in their jurisdictions. He, therefore, suggested that the matter be dropped. The Honorary General Secretary also reported that his efforts in this direction in corresponding on the subject with the Railway Board also had produced no results.

Dr. Ukil suggested that the matter now be represented to the Railway Minister. The house agreed to this suggestion. The Honorary General Secretary said that he would try and see what could be done by approaching the Minister for Railways, but he also said that he was not hopeful of obtaining much satisfaction.

(5) *Health Ministry's list of Drugs—Foreign products with Indian substitutes and other relevant matter re. the Pharmaceutical and Chemical Industry*:

The Working Committee had the pleasure of meeting Hamied and Amin—representatives of the Indian Chemical Manufacturers' Association who had been specially invited by the President to this meeting for discussion and presenting their views to the members of the Working Committee. The President introduced both Dr. Hamied and Dr. Amin to the members. He then asked Dr. S. C. Sen, the Honorary General Secretary, to explain why this consultation had been felt necessary. Dr. S. C. Sen, then, went on to narrate briefly the reasons why a closer co-operation was necessary between the Indian Medical Association on the one hand and the Indian Chemical Manufacturers' Association on the other. He mentioned about the discussions that took place between the Working Committee and the representatives of the Indian Chemical Manufacturers' Association on two previous occasions of the meetings of the Working Committee held at Cuttack in July, 1950 and again at Jamshedpur in December, 1951. He said that the Central Government had issued a list of Indian substitutes for reputed foreign medical products and asked the Indian Medical Association to give this list wide circulation among its members to encourage the use of the indigenous products by doctors in order to save foreign exchange and vis-a-vis to encourage the Indian industry. This, he presumed, was done at the request of the Indian Chemical Manufacturers' Association. The Indian Medical Association, however, wanted to know how the Government concluded that the products recommended by them were of standard manufacture and if these had been analysed properly before making the recommendations. He stressed the point that the members of the Indian Medical Association were indeed patriotic and would like to help the industry of their country, but at the same time they had to be convinced of the genuineness of the drugs manufactured. He mentioned also how eager the Indian Medical Association was to eradicate the manufacture of spurious drugs which was of late years rather in the increase, etc., etc.

Dr. Hamied then made a long speech; the salient points which he referred to, were the following:—

He observed that it had become a habit with Indians not to trust Indians. This was a legacy of the days of foreign domination and as a result anything which was produced in India, however genuine and good it might be, it was looked at with suspicion.

He asked why should there be laboratories only to check up on the drugs of Indian origin; why should not the imported foreign products even from the reputed manufacturers also be scrutinised from time to time for the benefit of all concerned.

He said that Government were not very careful in their policy of issuing licences for manufacture of drugs. His Association, the Indian Chemical Manufacturers' Association was comprised of only 55 member firms—whom he had the honour to represent and for whose integrity in business and methods of manufacture he could vouchsafe; but he said that Government had issued approximately 1600 licenses up-to-date for manufacture of drugs to as many firms the majority of whom, if not all, possessed neither the equipment nor the premises and arrangements for drug manufacture. Nor was there any proper machinery for scrutiny of the workings of those firms. As a result, due to activities of unscrupulous people what else could be expected but the production of sub-standard and non-genuine articles and unfair competition in the market. The inevitable was that in the end it was the public which suffered.

He emphasised that the laboratories of those firms on whose behalf he was speaking were really good, well equipped, well staffed and efficient. The scientists employed and working in these laboratories were indeed highly qualified. He invited the members of the Working Committee to visit and inspect any of these laboratories at any time without notice and make their own conclusions.

He went on to observe that the Government, though national, were enamoured of Foreign Advisers and Experts. So often were so called foreign experts called for advice in spite of the fact that there were in the country to-day,

47TH MEETING OF THE WORKING COMMITTEE, I.M.A., IN SESSION

Front Row—Dr. A. N. Ghei (M. B. Prov. Br.), Dr. Hamied & Dr. Amin (Representing I.C.M.A.), Lt.-Col. T. S. Shastri (S. I. Prov. Br.), Dr. P. A. S. Raghavan (S. I. Prov. Br.). *2nd Row*—Dr. M. Kothandaram (Mysore Prov. Br.), Dr. U. B. Narayan Rao (Bombay Prov. Br.), Dr. H. N. Shivapuri (U. P. State Br.), Dr. S. N. Saxena (U. P. State Br.), Dr. F. C. Shori (Punjab State Br.). *3rd Row*—Dr. A. K. Bose (Bengal Prov. Br.), Dr. S. P. Bhacca (Gujarat & Saurashtra Prov. Br.), Dr. Damodar Prasad (Bihar Prov. Br.), Dr. T. Chidanandam (Andhra Prov. Br.), Dr. V. Anantharama Sastry (Andhra Prov. Br.), *4th Row*—Dr. B. K. Ghosh (Bengal Prov. Br.), Dr. S. Samaddar (Bihar Prov. Br.), Dr K. K. Sen Gupta (Bengal Prov. Br.), Dr. P. K. Chatterjee (Bengal Prov. Br.).

47TH MEETING OF THE WORKING COMMITTEE IN PROGRESS. DR. S. C. SEN, HONY. GENERAL SECRETARY ADDRESING THE HOUSE.

Left to right—Dr. R. Sinha, Hony. Joint Secretary, Calcutta; Dr. A. P. Mittra, Hony. Joint Secretary, New Delhi; Dr. S. C. Sen, Hony. General Secretary, New Delhi; Dr. B. V. Mulay, President, Sholapur; Dr. C. S. Thakkar, Sr. Vice-President, Bombay; Dr. P. K. Guha, Asst. Editor, Calcutta.

available for consultation, Indian scientists of great eminence and international reputation who understand the needs, the difficulties and the problems of the country much better. Still the Government did not mind being hoodwinked and cheated by the so-called "foreign experts".

Dr. Hamied informed the members that though the industry in India was young and working against odds—it was nevertheless fully conscious of the need for constant research and that creditable work was being carefully carried on in this sphere at the laboratories of all the reputed Indian firms.

Unscrupulous people were, he said, engaged in the manufacture and marketing of spurious drugs. These people were very clever in "forging" the label and imitate the packing of reputed products both Indian and foreign. To suppress this nefarious trade, Government must be armed with adequate powers and strike ruthlessly in co-operation with the Drug trade, the medical practitioners and the public at large.

He also suggested that there should be method evolved by which the representatives of the medical profession should be authorised to inspect a pharmaceutical firm before Government issued a license to it for the manufactured drugs.

He then mentioned that prices of Indian products were now reasonably cheap and that there was a tendency for further fall in them. But, he said the real bugbear was the import duty. Government have levied the same duty of 38 per cent on both the finished product and the raw materials required for the industry which have to be imported from abroad. He asked where was the justifiability of such a policy and could this be called encouraging local industries? Furthermore, he said that the less he said the better re. the question of obtaining a license from Government for the import of scientific appliances—even essential apparatus. Then there was the policy of excessive Excise Duty on certain products—even when a firm manufactured them solely for their own requirements.

He then suggested the formation of a Standing Pharmaceutical and Medical Committee to be composed of three members each from the Indian Medical Association and the Indian Chemical Manufacturers' Association. This Committee would deal with all complaints re. faulty or substandard manufacture of drugs and would also do the work of scrutinising whenever necessary. Expenses incurred would be, he considered, quite negligible. Whenever there was cause for doubt the laboratories of the Indian Chemical Manufacturers' Association member firms would be extending their co-operation for purposes of analysis and report on drugs sent up for the purpose. It was also possible now to get this service from all Government laboratories so equipped. The Committee also would go into the matter of preparing a list of Indian products vis-a-vis the foreign products on the basis of identicals, equivalents and substitutes. Before concluding he also said that the Indian Chemical Manufacturers would be agreeable, so far as possible, to subsidise clinical research on the advice of the Indian Medical Association.

Afterwards there was some general discussion. Later Dr. S. C. Sen suggested that a joint delegation of representatives of the I. M. A. and I. C. M. A. should approach the Government to lay before them the points covered by Dr. Hamied and the considered views of both the Associations on all relevant matters.

(6) *Therapeutic Requirements of India*:

At the suggestion of the Indian Council of Medical Research (subject considered at the previous meeting of the Working Committee at Patna), the President had appointed an Expert Committee consisting of the following members to go into the matter:

1. Dr. B. V. Mulay (Sholapur), President, I.M.A.; 2. Dr. S. C. Sen (New Delhi), Hony. General Secretary, I.M.A.; 3. Dr. A. P. Mittra (New Delhi), Hony. Joint Secretary, I.M.A.; 4. Dr. K. K. Sen Gupta (Calcutta); 5. Dr. B. Mukherji, Director, Central Drug Research Institute, Lucknow; 6. Dr. M. D. Chakravarty, Director, Central Drug Laboratory, Calcutta (convener); 7. Dr. R. Choudhury, Director, School of Tropical Medicine, Calcutta; 8. Dr. B. N. Ghosh, Professor of Pharmacology and Therapeutics, R. G. Kar Medical College, Calcutta, past Vice-President, I.M.A.; 9. Dr. T. N. Banerjee, past President of the I.M.A.; 10. Dr. Chamanlal M. Mehta, past President of the I.M.A.; 11. One representative of the Association of Surgeons of India; 12. One representative of the Association of Physicians of India; 13. One representative of the Association of Gynæcologists and Obstetricians of India.

The Committee also desired that the Provincial Branches be advised to form their own regional committees to formulate views on the subject and forward their decisions for consideration by the above Expert Committee.

5. (*a*) *FORMATION OF NEW LOCAL BRANCHES.*
(*b*) *REVIVAL OF BRANCHES.*
(*c*) *SUSPENSION OF BRANCHES.*

(*a*) The Working Committee approved the formation of the following new local branches:

Name of Local Branch formed	*Provincial/ State Branch*	*Number of members*	*Date of formation*
1. Jhalawar	Rajputana	6	1/10/52
2. Bagnan	Bengal	5	1/10/52
3. Ghatal (Dist. Midnapore)	do.	14	1/10/52
4. Jamuria	do.	20	1/10/52
5. Dungarpur	Rajputana	6	1/ 4/53
6. Keonjhar	Orissa	—	1/10/52
7. Bhatinda	Punjab	10	1/ 4/53
8. Ratnagiri	M. & Karnatak	15	1/ 4/53
9. Khargone	Madhya Bharat	7	1/ 4/53
10. Ghaziabad	Uttar Pradesh	16	1/ 4/53
11. Dumka	Bihar	16	1/ 4/53
12. Parvatipuram	Andhra	5	1/10/52

(*b*) The revival of the following local branches was duly approved by the Working Committee:

		Date of revival
1. Bankura	Bengal	1/10/52
2. Aurangabad	Hyderabad	1/ 4/53

(*c*) The following local branches were declared suspended by the Working Committee as recommended by the Provincial/State branches concerned:

		Date of suspension
1. Srinagar	Punjab	1/10/52
2. Borsad	Gujarat & Saurashtra	do.
3. Roorkee	Uttar Pradesh	do.
4. Azamgarh	do.	do.
5. Deoband	do.	do.
6. Etawah	do.	do.
7. Mussourie	do.	do.
8. Mathura	do.	do.
9. Nainital	do.	do.
10. Gonda	do.	do.

6. *CONSIDERATION OF C. F. C. ARREARS, IF ANY*:

The Honorary General Secretary informed the house about the present position of C.F.C. arrears, in detail. He also informed the house about the request from a few Provincial Branches for consideration of writing off of certain amounts of arrears which they considered unrealisable. At this stage, Capt. Shivapuri and Dr. Samaddar deprecated the idea of writing off such arrears and reminded the house about its decision taken a few years ago, not to write off any arrears but that the Provincial Branches concerned should be held responsible for the payment. They also told the members how they dealt with the matter by taking prompt action and how they had paid up from their Provincial funds such unrealisable arrears of their local branches.

The Honorary General Secretary explained at length that it was all very well to take this sort of decision but it was really difficult to stick to a hard and fast rule in the case of genuine bad debts which would have to be considered always. He was glad, he said, to point out that the Provincial Branches were now actually more vigilant and were taking timely steps to avoid mounting up of arrears in C. F. C. Capt. Shivapuri suggested that the Central office should examine the balance sheets of the branches and their membership strengths before any writing off of arrears was considered or recommended. Capt. P. B. Mukerji supported the views of Capt. Shivapuri and suggested that those amounts which were outstanding only for a year or two should not be written off without making further efforts for realising them. Dr. Vinchure explained why in the case of his Provincial Branch a request had been made for writing off certain amounts rather within a year or so. Dr. A. C. Ukil said that he would recommend to his Provincial Branch to withdraw its request for writing off a small amount which was concerned. He, however, was of the opinion that the Indian Medical Association still was in the formative stage since up to date approximately only 25 per cent of the medical men in the country were members and in such state of affairs, he thought, it was not politic to apply the rules so strictly.

A general discussion followed in which following members took part.

Doctors U. B. Narayan Rao, P. A. S. Raghavan, and S. N. Saxena.

The President, Dr. Mulay, then said that the subject had by then been fully discussed and various viewpoints had been expressed.He saw that the general opinion of the members was that C.F.C. arrears should never be written off save and except in very extraordinary circumstances. He personally was of the same view and told the house that only recently he had addressed a letter to the Honorary General Secretary in which he had advised him that the time had been reached when the rules should be strictly applied with regard to the payment of C.F.C. instalments by the Provincial Branches.

The Honorary General Secretary said that the Central Office always could not inspect the balance sheets of the Branches as these were not always available, but it took the recommendations of the Provincial Branches to the Working Committee for consideration. He thought that this sort of discussion was futile and yet it came up for lengthy discussions at each meeting. He was of the opinion that some writing off of arrears would have to be done from time to time however strictly the rules were adhered to either by the Central Office or the Provincial offices.

The House then appointed a Sub-Committee consisting of the five office bearers at the Central office, viz., the Honorary General Secretary, the two Honorary Joint Secretaries, the Honorary Treasurer and the Honorary Assistant Secretary, and authorised it to scrutinise the requests for writing off and then bring the recommendations to the Working Committee at its next meeting.

The Honorary General Secretary then read out the amounts of C.F.C.—Branch-wise, for the current year which still remained to be paid, for the information of the members.

He then announced that the total membership strength of the Indian Medical Association on 25-4-1953 stood at 14999.

7. *ADOPTION OF AUDITED ACCOUNTS*:

(*a*) Central Office from 1/10/52 to 31/12/52 and from 1/1/53 to 31/3/53.
(*b*) Journal Department do. do. do. do.

Before the accounts were taken up for consideration, Dr. N. Bhattacharjee asked whether an office bearer of the Association, could under the rules, draw an honorarium sanctioned by the Central Council in the Budget for the Asst. Editor of the Journal and/or for the Secretary of the Journal.

Dr. Mulay, the President, said that the matter would be scrutinised and the opinion of the Honorary Legal Adviser would be obtained for reporting to the Working Committee at the next meeting.

(a) The audited accounts of the Central Office, as circulated for the two quarters—1/10/52 to 31/12/52 and 1/1/53 to 31/3/53 were then duly accepted.

(*b*) Similarly, the audited accounts of the Journal Office for the two quarters—1/10/52 to 31/12/52 and 1/1/53 to 31/3/53, as circulated, were duly adopted.

8. *"YOUR HEALTH"*—1. Accounts and Budget.
2. Editorial Committee.

XXX ALL-INDIA MEDICAL CONFERENCE

The thirtieth All-India Medical Conference will be held on 26th, 27th and 28th December, 1953, in the Osmania University Campus at Hyderabad. The Silver Jubilee of the Indian Medical Association which was founded at Calcutta in December, 1928, will also be celebrated during this conference.

NEW

a nasal vasoconstrictor with all these advantages:

1 *Two-stage vasoconstriction—immediate and prolonged without secondary vasodilatation.*

2 *Water miscible and non-oily —no interference with ciliary action and no danger of lipoid pneumonia.*

3 *Remains at the site of action —same viscosity as mucus.*

4 *Non-irritant—pH adjusted and isotonic with nasal secretion.*

5 *Readily absorbed by the mucosa— low surface tension.*

6 *Suitable for both adults and children.*

FENOX is indicated in the local treatment of the common cold, hay-fever, vasomotor rhinitis, sinusitis and other catarrhal conditions of the upper respiratory tract. It shrinks the swollen mucosa, maintains adequate drainage, and shortens the attack by diminishing the initial injury to the mucous membrane caused by intense congestion.

FENOX

Compound Isotonic Nasal Drops of Phenylephrine and Naphazoline. Supplied in ½ fl. oz. dropper bottles.

BOOTS PURE DRUG CO. (INDIA) LTD. P.O. BOX 680, BOMBAY

Boots

8117

Two antihistaminics of established value

Antistine Pyribenzamine

Wide experience has shown that patients suffering from the same allergic disease do not always respond equally well to the same antihistaminic drug. Occasionally, a particular patient may fail to derive benefit from a preparation which is normally effective. In such cases the administration of another drug from the group of histamine antagonists frequently produces the desired result.

Indications: Urticaria, Vasomotor rhinitis, Pruritus, Serum sickness, Anaphylactic shock, Hypersensitivity to drugs, Allergic asthma, etc.

A new medical approach to nasal decongestion...

Antistine-Privine Nebulizer

Contains 1: 200 Antistine and 1: 4000 Privine in aqueous isotonic solution. This new synergistic combination thus contains the effective antihistaminic, Antistine, to control allergic reactions, and the potent vasoconstrictor, Privine, to shrink the nasal mucosa or for decongestion of the conjunctiva.

Indications: Vasomotor rhinitis, Common cold, Hay fever, Allergic conjunctivitis, Spring catarrh, Eczema, Oedema of the eyelids, etc.

CIBA PHARMA LIMITED P. O. BOX 1123 - BOMBAY

1. The audited Accounts of "Your Health" for the year ending 31st December 1952 as circulated, were duly adopted. The Budget as prepared by the "Your Health" Editorial Committee for the year 1953 was also adopted.

2. It was noted that the President had re-appointed the old Editorial Committee for "Your Health" for the year 1953 with Dr. C. L. Mukherji taking the place of the late Dr. A. K. Sen on it. The Committee now constituted of the following members:

1. Dr. A. D. Mukharji—Editor.
2. Dr. P. K. Guha—Assistant Editor.
3. Dr. R. Sinha—Hony. Jt. Secretary at Calcutta.
4. Dr. C. L. Mukherji.

Resolution for Banking Account of Your Health

Resolved that the Account of "Your Health" will be operated jointly by any two of four members mentioned above. (Passed unanimously).

It was also decided to pay an honorarium of Rs. 50/- per annum to Messrs. G. Basu and Co. of Calcutta for acting as Hony. Auditors for "Your Health".

9. *LETTER No. 122/52-53 DATED 5/3/53 OF THE HONORARY SECRETARY, GUJARAT AND SAURASHTRA PROVINCIAL BRANCH, I.M.A. REGARDING CLARIFICATION OR INTERPRETATION OF THE WORD "SPECIALITY" IN THE RESOLUTION NO. 4 OF THE ALL-INDIA MEDICAL CONFERENCE HELD AT PATNA*:

Dr. A. P. Mittra, the Honorary Joint Secretary read out a letter from the Gujarat and Saurashtra Provincial Branch re. the clarification or interpretation of the word "Speciality". There was some general discussion and after hearing the various views, the President asked Doctors A. C. Ukil, P. B. Mukherji, A. K. Bose and P. K. Chatterjee to draft a definition. The definition was subsequently drafted but due to lack of time the President decided to defer consideration of this to the next meeting of the Working Committee.

10. *FURTHER CONSIDERATION OF PUBLIC TRUST ACT BOMBAY 1950.*

Dr. A. P. Mittra, the Honorary Joint Secretary informed the house about the opinions of the two Honorary Legal Advisers of the Association to whom the matter had been referred for opinion. He also said that all efforts of the Bombay Provincial Branch re. obtaining of exemption of the I. M. A. Branches in Bombay State from the application of this Act, had so far proved futile. He made a brief reference as to how the question had arisen and what action had so far been taken.

Dr. K. K. Sen Gupta then spoke and explained in detail, after quoting legal authorities, the interpretations of certain vital clauses of the Act which affected the I.M.A. According to him, the I.M.A. should be able to get exemption in view of the legal interpretations he had referred to. He thought that the Association should take the matter to court and that there was a good point in favour of exemption being granted.

Dr. C. S. Thakkar then spoke about the implications of the Act and how even a small branch with a nominal income was also liable for registration under the Act so long certain clauses of the Aims and Objects of the Indian Medical Association remained in the Rules of that Branch. No exemption was possible unless these clauses were allowed to be deleted by the Branch or Branches concerned. He proposed that a resolution be passed authorising any local or Provincial Branch to delete the relevant clauses f, g, and h of the Aims and Objects of the Indian Medical Association if it was desirable for obtaining an exemption from the application of the Act.

Dr. A. P. Mittra at this stage pointed out that no such resolution could be entertained in view of the the opinion and decision of the Working Committee at Patna (vide proceedings.) A period of six months had not elapsed since that decision was taken and as such it could not be reconsidered.

The President and Dr. Thakkar agreed to this point of order and the latter withdrew his proposal.

The house then decided, on the suggestion of the President that since Dr. K. K. Sen Gupta had brought out new points re. the interpretations of the clauses of the Public Trust Act of Bombay, and had made a study of the subject, he be asked to go to Bombay to meet the Charity Commissioner along with three other representatives, one each from Poona, Bombay and Gujarat. Dr. K. K. Sen Gupta agreed to the request and it was decided that for the expenses of his journey to Bombay for the purpose, T. A. would be permissible.

11. *LETTER NO. MMC/1512/52 OF 6/2/53 OF THE MADRAS MEDICAL COUNCIL AS TO RESOLUTION OF THE WORKING COMMITTEE OF THE I.M.A. RE. 3 YEARS' MEDICAL COURSE TO BE STARTED BY MADRAS GOVERNMENT*:

The letter was read. Dr. A. P. Mittra, the Honorary Joint Secretary informed the house what action had been taken by the Central Office since the passing of the relevant resolution at the meeting of the Working Committee held at Delhi in October 1952 and what replies had so far been received from the Medical Council of India and the Madras Medical Council. He informed the house that the Government of Madras also had been addressed on the matter but no reply had been received. It was decided to pursue the matter further by sending a reminder to the Government of Madras.

12. *LETTER NO. 231 DATED 10/1/53 OF PRESIDENT OF THE INDIAN MEDICAL ASSOCIATION REGARDING DOCTOR SETHNA OF BOMBAY*:

Dr. A. P. Mittra gave details of the case briefly. He also informed the house that the Bombay Provincial Branch had admitted its mistake and that it was irregular to have nominated a substitute member to the Working Committee who was at the time not a member officially enrolled at the Central Office who was also not a member of the Provincial Council. It was decided that Dr. Sethna was not eligible to get his T. A.

13. *LETTER NO. 320 DATED 24/2/53 OF DR. B. V. MULAY, PRESIDENT, I.M.A. REGARDING RIGID OBSERVANCE OF THE I.M.A. RULES NO. 8B(b), ETC. REGARDING M. A. FORMS AND CENTRAL FUND CONTRIBUTION*:

The President decided to defer consideration of this letter till the time when the Draft Rules would be considered.

14. *LETTERS DATED 9/2/53 AND 16/3/53 OF THE SOCIETY FOR THE STUDY OF INDUSTRIAL MEDICINE, INDIA, AS TO MUTUAL REPRESENTATION OF THE I.M.A. AND SOCIETY FOR THE STUDY OF INDUSTRIAL MEDICINE*:

During the consideration of this matter, Dr. Banerjee, the authorised representative of the Society for the study of Industrial Medicine, was present by special invitation.

Dr. Sen, the Honorary General Secretary, read out a letter he had received from the Sotiety who desired mutual representation on the Central Council of the Indian Medical Association and its Executive Committee. He said that he had written to them that the matter would be considered by the Working Committee, but the procedure would be simplified if all the members of the Society became members of the Indian Medical Association as well. As the I.M.A. was redrafting its existing rules and as there was a proposal to make provision for representation of Specialist bodies on the Central Council, this request might be met. It was also possible to have a special autonomous body within the I.M.A. provided of course, all members of the Society became members of the Indian Medical Association.

Dr. B. Banerjee then addressed the members and explained the views of his Society and its aims and also why his Council had decided that they would not at the present stage "compel" all the members of his Society to become members of the I.M.A. He said that the total membership strength of this Society was 420 and he thought that about 80 per cent of them were already members of the I.M.A. He also said that in his Society there was also a class of members called 'Associate Members' who were not medical men.

A general discussion followed in which many members took part. Some were in favour of finding a way by which a liaison could be established or even to take the Society within the folds of the I.M.A. as an autonomous group. It was also suggested that out of the members of the Society who were also members of the I.M.A. a special Committee of the Indian Medical Association could be appointed.

Dr. S. C. Sen said that these things could only be possible if the Society also made a rule that one essential qualification for becoming its member should be membership of the Indian Medical Association.

At this stage Dr. Bannerjee left after the President had thanked him for coming.

There was some further discussion on the matter and the principles involved. Capt. Shivapuri expressed his views in detail and said that he was against any liaison or affiliation with any body like this Society unless all its members were also members of the I.M.A. Dr. F. C. Shori expressed certain suspicions and said that the I.M.A. should guard against its being used as a lever by such bodies for pressing forward their views or demands. Dr. N. Bhattacharjee mentioned about the dangers that would arise by such representations.

Dr. Mulay the President, said that the time had arrived when close co-operation with all specialist bodies should be established and to devise ways and means for a line of action, a sub-committee should be appointed which would go into the matter.

Dr. P. K. Chatterjee suggested that Scientific Committees could be formed at Provincial levels and a Central Scientific Committee could be established which would have on it representatives from the Provincial Committees and this Committee would go into the question of scientific matter and specialist groups or Associations. The President, however, thought that that would be a very cumbersome process.

Dr. Amar Nath proposed that the Working Committee should approve of the points which the Honorary General Secretary had written about to the Society and opinion be elicited from Provincial Branches on the matter.

It was decided that the action taken by the Honorary General Secretary be approved.

No decision was taken re. the Society for the Study of Industrial Medicine but it was agreed unanimously that the first condition for further consideration of the matter should be that all medical members of the Society must also be members of the Indian Medical Association.

15. *PRESS NOTE ISSUED BY THE HONORARY GENERAL SECRETARY, RE. EMPLOYEES' STATE INSURANCE SCHEME AFTER THE SPECIAL EMERGENT MEETING OF THE PRESIDENT, VICE-PRESIDENTS AND SPECIALLY INVITED REPRESENTATIVES OF SOME PROVINCIAL BRANCHES AND OFFICE-BEARERS OF THE ASSOCIATION AT CENTRAL OFFICE, HELD AT DELHI ON THE 4TH MARCH 1953*:

Just as the Honorary General Secretary rose to inform the house about the circular which was issued re. the Employees' State Insurance Scheme after an emergent meeting held at Delhi on 4th March 1953 to which special representatives had been invited to attend from those States which were directly affected and the office bearers of the Central Office, Dr. Damodar Prasad asked on a point of order what were the reasons for holding such a meeting. Dr. Sen then went on to explain that a situation had arisen because of certain statements and allegations made by certain members of the Governments of Bombay and Punjab publicly and on the floors of the legislatures imputing that the Indian Medical Association was not co-operating and was inclined to demand exorbitant payments for doctors without any consideration of the interest and welfare of the nation. It was, therefore, decided to call a special meeting with the sanction of the President, to which were invited representatives from those Provincial Branches which were immediately concerned and affected and some of those members who had made a special study of the subject of Employment State Insurance Corporation. He then said that the circular had been sent to all Branches and it had been published in the journal.

Capt. H. N. Shivapuri questioned if it was regular to have called such an emergent meeting. The Honorary General Secretary mentioned that another objection of a similar nature had been received by letter from Dr. D. G. Ojha.

Some general discussion followed and ultimately it was agreed that an emergency had arisen and that the President and the Honorary General Secretary had acted in the interest of the Association and the profession and therefore, the special emergent meeting held at Delhi on 4th March 1953 was necessary and quite in order.

The payment of T. A. to the members who attended the said meeting was approved.

The Working Committee fully approved the circular issued from the Central office after the special emergent meeting.

16. *LETTER NO. 6/52/53 DATED 20/3/53 OF THE SECRETARY, BIRATNAGAR MEDICAL ASSOCIATION, P.O. JOGBANI (PURNEA), AS REGARDS AFFILIATION OF THIS ASSOCIATION WITH THE I.M.A. IN REPLY TO THIS OFFICE LETTER NO. 1615/52-13 DATED 23/1/53 ON THE SUBJECT*:

Dr. A. P. Mittra, the Honorary Joint Secretary read out the relevant correspondence regarding the request of Biratnagar Medical Association, Nepal, for affiliation with the Indian Medical Association. After some discussion, it was decided that all favourable consideration should be given, but before the final decision is taken, the Central Office should scrutinize the Rules affecting the subject, and make necessary recommendations for the consideration of the Working Committee.

17. *LETTER NO. 1(4) PHEC/53 DATED 16/3/53 OF THE GOVERNMENT OF INDIA, MINISTRY OF COMMERCE AND INDUSTRY, RE: PHARMACEUTICAL ENQUIRY COMMITTEE AND MEMORANDUM CONVEYING OUR VIEWS*:

Dr. A. P. Mittra, the Honorary Joint Secretary reported to the House that a letter had been received from the recently appointed Pharmaceutical Enquiry Committee by the Government of India, asking for a Memorandum from the Association on the subject. They had also recently sent a questionnaire. He then read out the letter.

On the suggestion of the President, the following Special Sub-Committee was formed to go into the matter and prepare the Memorandum as soon as possible, which would have to be forwarded to the Government from the Central Office:

Members of the Special Sub-Committee.

1. Capt. P. B. Mukerji, 2. Dr. H. Ghosh, 3. Dr. Balin Ghosh, 4. Prof. B. N. Ghosh, 5. Dr. A. C. Ukil—Convener, with powers to co-opt other members.

18. *U. P. STATE BRANCH RESOLUTION RE. PHARMACY COUNCIL*:

Capt. H. N. Shivapuri whose resolution on the formation of a Pharmacy Council was before the House for consideration, explained the genesis and the reason for proposing it. In view of the discussion with the repreentatives of the Indian Chemical Manufacturers' Association and the suggestion for forming a joint Medical and Pharmaceutical Committee or Council for the same purpose, the Working Committee decided to defer the matter till the draft scheme had been received from the Indian Chemical Manufacturers' Association. At the time of considering that scheme, Capt. Shivapuri's suggestions will also be kept in view.

19. *(A) PATENTING OF THE CREST OF THE ASSOCIATION*:
(B) NAME PLATES RECEIVED FROM DOCTOR F. C. SHORI, AMRITSAR:

Dr. A. P. Mittra, the Honorary Joint Secretary, read out a letter which had been received from Dr. F. C. Shori on behalf of his Provincial Branch regarding the advisability of patenting the crest of the Association. His other suggestion was that members of the Association should be entitled to use the crest on their name-plates fixed outside their clinics and houses.

Dr. Shori then formally moved the proposal and explained the reasons behind it, in detail. He thought that by having the crest of the Association on the name-plates of qualified doctors who are members, all over India, the public at large will in time come to distinction between a properly qualified Registered Medical Practitioner and the quack and thus this step would be in the interest of the Indian Medical Association and its members, the profession and the public.

Capt. H. N. Shivapuri also spoke a few words in favour of this proposal and formally seconded it.

After some discussion, it was decided that before the final decision was taken, the Provincial Branches should be asked to give their opinion on the matter. In the meanwhile, the Central Office was to proceed with the enquiries regarding the formalities which had to be observed in getting the crest patented.

20. *NOMINATION OF DELEGATES, ALTERNATE DELEGATES AND OBSERVERS FOR VARIOUS OVERSEAS CONFERENCES*:

(1) The Working Committee nominated Dr. S. C. Sen, the Honorary General Secretary, as the only delegate of the Indian Medical Association to the 7th General Assembly of the World Medical Association to be held at the Hague, Netherland, from August 31 to September 5, 1953. Alternate delegates and observers were not nominated for this session, but the President and the Honorary General Secretary were to use their discretion, if it was found necessary to make any such nominations.

(2) Dr. S. C. Sen was also authorised to attend the Medical Editors' Conference on behalf of the Indian Medical Association, which was also to be held during the session of the General Assembly of the World Medical Association.

(3) Re. 121st Annual Meeting of the British Medical Association to be held in Cardiff from July 13th to 17th, 1953: In case Dr. Sen, the Honorary General Secretary, happened to be in England at the time of this Conference, he was authorised also to attend it on behalf of the Indian Medical Association. No other representative was chosen.

Dr. Sen, at this stage, explained about the expenses during the Conference. He said that as he happened to be a member of the W. M. A. Council, he would get T. A. from the World Medical Association and also living expenses for the days of the Council meeting would be provided for him, but from this year, his per diem expenses for the duration of the General Assembly would not be met by the Council. The Working Committee, on this explanation, agreed to meet the per diem expenses of one delegate, i.e., Dr. S. C. Sen, from the Association funds.

(4) Re. the First World Conference on Medical Education to be held in London, England, from 22nd August to 29th August, 1953.

The Working Committee also requested Dr. Sen to attend this Conference on behalf of the Indian Medical Association if it was possible for him to do so. Per diem expense for attending this meeting would also be admissible to him.

21. *LETTER NO. SS 62/52-53 DATED 29/3/53 OF THE HONORARY SECRETARY, MADRAS BRANCH REG. Rs. 8,350/8/5—FUNDS OF THE B. M. A. MADRAS BRANCH*:

The House decided that the matter be dealt with by the Central Office and the decision taken in consultation with the Madras Branch and the South Indian Provincial Branch.

22. *CONSIDERATION OF THE RULES OF THE INDIAN MEDICAL ASSOCIATION AS REDRAFTED BY THE AD-HOC COMMITTEE APPOINTED FOR THE PURPOSE AND GENERAL SECRETARY'S OBSERVATIONS*:

Dr. K. K. Sengupta presented the rules proposed by the Ad-hoc Committee and after some general discussion, the rules were considered clause by clause:—

During the general discussions, the Honorary General Secretary suggested that all clauses and sub-clauses should be numbered separately as this facilitates reference to them. The House agreed to the proposal. He also proposed that wherever the words "Provincial or State Branches" occurred, they should be altered to "State or Territorial Branches".

The proposed rules were then discussed clause by clause, and the amended rules are incorporated as follows:

Discussing the question of subscription, the Honorary General Secretary (Dr. S. C. Sen) suggested that the method of collection of subscription should be flexible. Clause '8' under 'Annual Subscription' of the Bye-laws was added.

Dr. S. C. Sen moved for consideration increase in subscription rates. He said more funds were needed for better and more efficient working of the Central Council, Journal Department and the Provincial or State Branches. The present C. F. C. quota of Rs. 8/- per member (Rs. 3/- for the Provincial Branches and Rs. 5/- for the Central Council and the Journal) was insufficient. Provincial or State Branches needed more money, if they are to take up adequately the responsibility that is theirs. If possible, they must have permanent offices, with suitable staff.

The work of the Central Secretariat is increasing and should go on increasing in different directions. This can be done only if there is adequate and efficient whole-time paid staff. Honorary workers who have to earn their livelihood by practice, can only give some limited time for the Association work, but more cannot be expected of them. Even they may have to be paid honoraria and or conveyance allowance. Similarly for the Journal Department, it may be necessary either to give honorarium and conveyance allowance to the Assistant Editors and Secretary of the Journal and or to have some whole-time paid staff. The W. M. A. Subscription will also be enhanced, and therefore, we have to find funds for it. He was of opinion that membership will not be seriously affected by an increase of subscription, but efficiency will increase.

Dr. A. K. Bose opposed the proposal and said that any increase of subscription in our present circumstances was likely to affect the Association adversely.

After discussion in which Dr. P. K. Chatterjee and Dr. F. C. Shori also took part, at the proposal of Dr. A. C. Ukil, the Honorary General Secretary was authorised by the Working Committee and the President to prepare a Memorandum explaining the need for the increase of subscription.

At the close of the discussion, Dr. S. C. Sen said that he may have to be out of India for two months soon. The Working Committee agreed that Dr. A. P. Mittra will officiate as General Secretary in his absence.

Consideration of the Report of the Ad-Hoc Committee on Rules was then taken up and decisions were taken regarding Memorandum, Rules and Bye-laws up to Clause 7.

Consideration of the Bye-laws beyond and including Clause 8 of the Bye-laws suggested by the Ad-Hoc Committee was postponed till the next meeting of the Working Committee.

23. *LETTER NO. 38 DATED 19/3/53 OF THE JALGAON BRANCH AND COPIES OF THE CORRESPONDENCE REGARDING CONTROVERSY BETWEEN THE BRANCH AND THE MAHARASHTRA AND KARNATAK PROVINCIAL BRANCH*:

Dr. A. P. Mittra, the Honorary Joint Secretary said that this subject had been hanging fire for a considerable time and the dispute between the Jalgaon Branch and the Maharashtra and Karnatak Provincial Branch did not seem so far to be amicably settled. He mentioned that he had received copies of voluminous correspondence which had been exchanged between the Provincial Branch and the local branch concerned. Dr. B. V. Mulay, the President, then spoke and gave the history of the case briefly. He informed the house that differences had arisen between the Jalgaon Branch and the Hony. Joint Secretaries of the Maharashtra and Karnatak Provincial Branch mainly on three questions:—

1. Inadequate information of Provincial Council Meeting at Kalyan in 1951 during the Provincial Council Session.

2. Nominations of President and Vice-Presidents (Provincial) by the Jalgaon Branch not having been included in the voting paper.

3. The responsibility of collection of C.F.C. arrears of a newly admitted member.

Dr. Mulay continued and said that he himself along with Dr. Joshi and Dr. Gupte visited Jalgaon and Poona to bring about a compromise and to request the Jalgaon Branch to withdraw an offending letter written to the Honorary Joint Secretaries of Maharashtra and Karnatak Provincial Branch and also to request them to withdraw their resignations which they had tendered on this issue. On Jalgaon Branch failing to do so, the actions of the Hony. Joint Secretaries of the Provincial Branch were upheld in a meeting of the Provincial Council held at Poona. It was also decided at that meeting to inform the Jalgaon Branch that after discussion it was unanimously decided that the Working Committee of the Indian Medical Association saw no justification to interfere with the final decision taken by the Provincial Council of the Maharashtra and Karnatak Provincial Branch at Poona and the matter be considered as closed.

After some general discussion, it was recommended by the House that the President might use his good offices once again and try to influence the Provincial Branch and the Jalgaon Branch to come to a compromise and close the matter amicably."

24. *REPORT ON THE WORLD MEDICAL ASSOCIATION BY THE HONORARY GENERAL SECRETARY*:

Dr. S. C. Sen, the Honorary General Secretary briefly reported to the House about the activities of the World

Medical Association and the decisions of the Council of the World Medical Association which he had attended at Lisbon very recently.

25. *LETTER FROM DOCTOR B. V. MULAY ON THE SUBJECT OF PROHIBITION*:

Dr. Mulay decided not to discuss this letter at this meeting.

26. *ANY OTHER MATTER WITH THE PERMISSION OF THE PRESIDENT*:

(a) It was decided to accept the invitation of the U. P. State Branch and to hold the next meeting of the Working Committee at Lucknow from 5th to 6th October, 1953. It was also decided that if necessary an extra day would be taken up for the meeting either on the 4th October or on the 7th October.

(b) Dr. A. P. Mittra, the Honorary Joint Secretary informed the house that due to the death of Dr. A. K. Sen, the representative of the Indian Medical Association on the Drugs Technical Advisory Board, a vacancy had occurred and the Working Committee should choose its new representative.

Dr. K. K. Sengupta (Calcutta) was unanimously chosen as representative of the Indian Medical Association on the Drugs Technical Advisory Board.

(c) The invitation of Lucknow Branch for holding the 1954 session of the All-India Medical Conference at Lucknow was recommended for favourable consideration by the Central Council at its next Annual Meeting in December, 1953.

(d) Re. International Pharmacopœia proposed by the World Medical Association: The file was to be passed on to Dr. K. K. Sengupta for perusal and advice to the Central Office.

(e) Dr. J. Mojumdar's correspondence regarding the position of Licentiate members becoming members of the British Medical Association according to the Agreement of Mutual Affiliation between the I.M.A. and the B.M.A., was considered.

After scrutinising the clauses of the Agreement, particularly article 6, the opinion of the Working Committee was that the British Medical Association had not done anything contrary to the clauses of the Agreement.

ACKNOWLEDGMENTS

The following resolution was moved from the chair and passed unanimously:

"This meeting of the Working Committee of the Indian Medical Association places on record its deep appreciation and thanks for the hospitality and courtesy accorded to its members on the occasion of the meeting held at Calcutta from 30th April to 2nd May, 1953, by the Calcutta Branch and the Bengal Provincial Branch of the Indian Medical Association.

With a vote of thanks to the chair, the meeting terminated.

S. C. SEN, Honorary General Secretary. B. V. MULAY, President.

BRANCH NOTES

ANAMALAI BRANCH—The annual report of the branch shows that membership decreased slightly at the end of the year. Clinical meetings were held each month and interesting and instructive subjects were discussed.

AMRELI BRANCH—A meeting of the branch was held on 14-6-53. Eight members were present. Dr. M. S. Bhatt read notes on Early Clinical Diagnosis of Pulmonary T. B. A condolence resolution was passed on the death of Dr. Vaidya.

ASSAM PROVINCIAL BRANCH—The Assam Medical Relief Committee formed under the auspices of the Assam Branch, I.M.A., in its report has published a detailed account of its activities. An Earthquake Medical Relief Subcommittee was formed on 26-8-50 with Dr. B. Barooah as president, Dr. G. S. Das as secretary and Dr. P. Duarah as Organising Secretary. There were two classes of members constituting the Committee viz. (1) Medical (2) Non-medical. The total number of patients treated in 1951 was 6,432. The object of the committee appears to be fulfilled.

BANGALORE BRANCH—A combined meeting of the working committee of the provincial and Bangalore branches was held on 27-3-53 with Dr. B. R. R. Reddy in the chair. Four members of the Provincial branch and nine of the Bangalore Branch were present. It was decided not to send a representative to the sales-tax committee.

BHOWALI BRANCH—A meeting of the branch was held on 11-5-53 with Dr. (Mrs.) Khazan Chand in the chair. A sub-committee was formed to consider the circular regarding the first Medical Conference on Medical Education. It was agreed to organise a health week in the suburbs. Dr. G. D. Agrawal read a paper on the desirability of having or not B. C. G. Vaccination as a mass measure.

BONGAON BRANCH—In a meeting of the branch, office-bearers for the year 1953-54 were elected with Dr. J. R. Dhar, M.L.A. (Dy. Minister, Jails, Government of West Bengal) as president and Dr. A. K. Sinha as secretary.

CHAIBASA BRANCH—A meeting of the branch was held on 14-12-52 at Noamundi at the invitation of Dr. (Miss) J. Bhattacherya and Dr. Surjyanarain, Medical Officers, Tisco Hospital. Thirteen members were present. The meeting condoled the death of Dr. N. R. Bakshi, a member of the branch. Dr. S. K. Samanta read a paper on Immunity and Tuberculin test of B. C. G. Vaccine.

* * * *

A meeting of the branch was held on 18-1-53 at Chakradharpur. Twenty doctors were present. Dr. D. N. Roy presided. Dr. S. K. Samanta read a paper on "Beri-Beri" and its prevention.

* * * *

A meeting of the branch was held on 22-2-53. Sixteen members were present. Dr. D. N. Roy was in the chair. Dr. B. N. Jha demonstrated a case of Status Asthmaticus treated with streptomycin.

* * * *

The annual general meeting of the branch was held on 22-3-53 with Lt.-Col. Nazib Khan in the chair. Twenty-five members were present. Five scientific papers were read. Office bearers were elected with Dr. D. N. Roy as president and Dr. P. K. Mittra and Dr. R. P. De as secretaries. In the opinion of the members, the basic pay of medical officers of the D. B. Singhbhum should be raised to the same scale as enjoyed by the Sub-Asst. Surgeons in the Bihar State Medical Service.

COIMBATORE BRANCH—A meeting of the branch was held on 16-5-53 with Dr. P. N. Ramasami Naidu in the chair. Seventy members were present. Dr. P. K. Krishnankutti gave an interesting talk on "Modern Trends in Cardiology" which was very much appreciated.

* * * *

A meeting of the branch was held on 7-6-53. Dr. P. N. Ramasami Naidu presided. Eighty members were present. Dr. S. T. Achar of Madras Medical College gave a talk on "Meningitis in Childhood other than Tuberculous Meningitis" which was followed by a lively discussion.

FEROZEPORE BRANCH—A meeting of the branch was held on 21-4-53 with Dr. Bhola in the chair. Thirteen members were present.

* * * *

A meeting of the branch was held on 12-5-53. Dr. C. P. Khanna spoke on Management of Diabetic Patients.

* * * *

A meeting of the branch was held on 9-6-53 in the Central Jail at the special invitation of the Superintendent of the Jail. Twenty-seven members were present with their family members. The visitors were shown round the jail.

GHUGUDANGA BRANCH—A meeting of the branch was held on 21-6-53 with Dr. S. Sarker in the chair. Thirteen members were present. The meeting expressed its deep sense of sorrow at the sad death of Dr. A. K. Sen, ex-Vice-President of I.M.A.

GOALPARA BRANCH—At a meeting of the members of the medical profession of Goalpara, held on 14-3-53, the Goalpara Branch of I.M.A. was formed. Dr. K. N. Brahma was elected the president and Dr. Md. Mehdi Ali, the secretary. The branch is in operation with effect from 1st April, 1953.

ROUSSEL

LES LABORATOIRES ROUSSEL, de PARIS,

a leader in the field of Hormonotherapy, present to the Medical Profession their:

CORTISONE - The most recent of wonder drugs that physicians are waiting for treatment of collagenic diseases.

STERANDRYL - A pure and potent male Hormone.

CRINESTRYL - A folliculin of highest purity.

LUTOGYL - The pure hormone of Corpus Luteum.

ETHINESTRYL - The most potent of all synthetic oestrogens.

LUTONESTRYL - A suitable tablet allowing Zondek Method Orally.

SYNCORTYL - A pure hormone of the suprarenal gland.

ROUSSEL

YOU CAN DEPEND ON THIS TRADE MARK.

Ampoules - Tablets - Glossettes - Implants - Multiple doses vials - are available and rapidly delivered by our sole distributors in India:

FRANCO-INDIAN UNITED LABORATORIES.
P. O. Box 935, Bombay 1.

LITERATURE AND SAMPLES WILL GLADLY BE SENT ON REQUEST.

ROUSSEL

Some Notable Specialities

ELIXIR MELGADINE :- Tonic & Recuperative food adjunct in Convalescence & Wasting Diseases.

CIVALBROM :– A Sedative.

HEPOBYLE with METHIONINE and CHOLINE :– A tried Remedy for Sluggish Liver.

LEUTOVARIN :- For Irregular Menstrual functions.

PULMOSIN :– For respiratory Catarrh and Whooping Cough

NOVOBROM :– Hypnotic and Sedative.

VITONA COMPOUND :–Especially in Wasting Diseases & Pulmonary Infections.

AYASTYPTIN (For oral use) :–Hæmostatic.

Dragon Chemical Works (R) Ltd.

204-1, Russa Road South, Calcutta 33.

USE *Standard's*

Indicated in Loss of fluid, Toxæmia, Hæmorrhage, Shock etc.

Hypertonic and Hypotonic Saline are also supplied.

GLUCOSE SALINE

5% Glucose in Normal Saline (Pyrogen-free)

STANDARD CHEMICAL & PHARMACEUTICAL WORKS
CALCUTTA

Stadmed

AMINOZYME

Amino acids cum Enzymes

Supplies Essential Amino Acids, Vitamins and Enzymes *for* SOUND NUTRITION

Each fluid ounce contains :

Amino Acids	6000 mg. (20 p.c. W/V)	Nicotinic acid amide (P.P.)	20 mg.
		Ascorbic Acid (Vit. C)	20 mg.
Folic Acid	1·5 mg.	Proteolytic Enzyme	10 grs.
Vitamin (B_1)	400 I.U.	Amylolytic Enzyme	5 grs.
Riboflavin (B_2)	0·5 mg.	Lipolytic Enzyme	5 grs.
Pyridoxine (B_6)	0·5 mg.	with other necessary adjuvants.	

INDICATIONS :

Protein deficiency due to malnutrition, Typhoid and other infectious diseases, Gastro-enteritis, Peptic Ulcers, Liver Cirrhosis, Dyspepsia, Chronic Amœbiasis, Flatulence, Pre and Postoperative managements, Nutritional Œdema, Anæmias, Tuberculosis etc., etc.

Sole Distributors :

Stadmed Distributors Ltd., Calcutta 4

STADMED LIMITED, CALCUTTA 4

The restorative tonic
'LIVOGEN'

Livogen is invaluable in all cases of nervous depression, reduced vitality, and general debility. It restores vitality rationally, by supplementing depleted vitamin B reserves of the body. It is a balanced combination of liquid extract of liver B.P., extract of yeast, vitamin B_1, and nicotinic acid. The suggested dosage is two teaspoonfuls once or twice daily. Literature is available to members of the medical profession on request.

Each fluid ounce contains 10 micrograms of Vitamin B_{12}
Bottles of 4 and 16 fluid ounces.

THE BRITISH DRUG HOUSES LTD., LONDON

Distributed in India by:

BRITISH DRUG HOUSES (INDIA) LTD.,

P. O. BOX 1341, BOMBAY 1. Branches at: CALCUTTA · DELHI · MADRAS

- Surgical and Midwifery Instruments.
- Hospital furnitures.
- High pressure sterilizers.
- Cholera sets.
- Vaccinating lancets and sets.
- First Aid boxes and Dressings.
- Railway relief van requisites.
- Orthopaedic appliances.
- 'Gillette' Surgical Blades and Handles.

"Suppliers to Central and Pradesh Governments, Railways, District Boards, Hospitals, Tea Gardens, Mills, Mines Etc."

Chemical & Surgical Works Ltd.

(Successors to Badam Bros.)

186, Bowbazar Street, 95-A, Chittaranjan Avenue,

Calcutta—12.

ARSENO-TYPHOID

The treatment for

FILARIASIS

CRR

CALCUTTA CLINICAL RESEARCH ASSOCIATION LTD.
CALCUTTA

For your patient with low Sodium-diet . . . .

K-SALT

. . . . . will help to stay on his diet.

K-SALT is a dietetic salt-substitute, having taste & flavour like salt, look like salt.

K-SALT contains:

NO LITHIUM
NO AMMONIUM

K-SALT is recommended in œdemas of pregnancy, in congestive heart-failure, hypertension, arterio-sclerosis, and in obese persons under reducing diet.

K-SALT is contra indicated in severe renal disorders and oliguria.

Further details on request.

When nutritional Status is depressed

TRYZYM

TABLETS ensure adequate vitamin intake with proper absorption and utilisation of Carbohydrate, Protein & Fat.

★

Tryzym is a valuable dietary adjunct, extremely useful in Pregnancy, convalescence and management of geriatric patients.

Tryzym is a combination of four digestive enzymes— Diastase, Pepsin, Papain and Pancreatin, with Nux Vomica & Vit. B factors.

SAMPLES ARE SUPPLIED TO PRACTISING PHYSICIANS ON REQUEST.

THE CALCUTTA CHEMICAL CO., LTD.

35, PANDITIA ROAD :: CALCUTTA-29

Branch Offices & Depots at :

Madras, Bombay, Delhi, Vizag, Nagpur, Ranchi, Patna, Jamshedpur, Bangalore, Siliguri, Madhupur, Bhagalpur.

The efficacy of 'Plastules' in the treatment of iron-deficiency anaemias has now been well established. 'Plastules' Liver and 'Plastules' Folic Acid ensure maximum haemopoesis in cases of delayed response. Now that vitamin B_{12} is also being used extensively for anaemias, a fourth variety of 'Plastules'—'PLASTULES' with VITAMIN B_{12}—has been added to the well-known Wyeth range of haematinic preparations.

'PLASTULES'
BRAND REGD.
HAEMATINIC COMPOUND

Wyeth

JOHN WYETH & BROTHER LIMITED, LONDON

Distributors: GEOFFREY MANNERS & CO., LTD.
Bombay · Calcutta · Madras · Delhi

Rational

LIPOTROPIC CUM VIT. B-COMPLEX THERAPY

with

LITROPLEX

ELIXIR

Vitamin B-Complex

with

Lipotropic factors

in a palatable Syrup Base

containing	Vitamin B_1	10 Mgms.
	Vitamin B_2	2 Mgms.
	Vitamin B_6	1 Mgm.
	Nicotinic Acid	10 Mgms.
	Methionine	500 Mgms.
	Choline Chloride	250 Mgms.
and	Vitamin B_{12}	10 Mc. gms per fluid ounce

(Free from alcohol)

Navaratna Pharmaceutical Laboratories,

P. B. No. 13, Mattancherri, P. O.

COCHIN.

Available at all leading Chemists

WANTED DISTRIBUTORS OR STOCKISTS IN EVERY PROVINCE to sell our products on suitable terms. MINIMUM SALE GUARANTEE WANTED Rs. 1000/- Nett Per month.

For Further particulars, please write to :

ABCO'S PHARMACEUTICAL WORKS

Phone : B. B. 158 (INDIA) LIMITED. CALCUTTA-11 Gram : ABCO HOUSE

HAEMOCALCIN

Liver Ext., Cal. Gluconate, Vit. B_1 B_6 & C.

A Calcium-liver-Vitamin therapy of proved efficiency in the cases of Calcium deficiency, wasting conditions, Respiratory disorders, Haemorrhage & Anaemia etc. Available both for Intra-muscular Injections non-toxic in 2 & 5 c.c. ampoules and for Oral administration in 8 oz. phials.

Full particulars from :—

Calcutta Polyclinic Limited.

6/A, Surendranath Banerjee Road, CALCUTTA-13.

SPIRODIN

(Non-toxic, Non-irritant, Safe.)

★ Specific in Chronic Inflammatory Conditions.

★ It Promotes Epithelialisation and Granulation.

Indicated in :

★ ABSCESS
★ PELVIC CELLULITIS
★ PUERPERAL SEPSIS
★ INGUINAL LYMPHADENITIS
★ TROPHIC ULCERS

Sold in 30 mgm & 60 mgm ampoules for injection and 1¼% solution for external use.

Gram : "SPIROCHIN", Calcutta.

Alkaloid Research Laboratories Ltd.

47, Harish Chatterjee Street, Calcutta-26.

BED-SIDE MEDICINE

By Rai Dr. A. R. MAJUMDAR BAHADUR, Professor of Clinical Medicine, Medical College, Calcutta, Retired. A complete textbook of Medicine. Clinical and Systematic containing : (*i*) latest methods of case examination, clinical, instrumental and laboratory, simple and specialised and (*ii*) full consideration of diseases, system by system with ætiology, pathology, clinical picture, diagnosis, prognosis and modern treatment with prescriptions.

Therapeutic Advances 1951-52 have been added

This is the comprehensive, authoritative, profusely illustrated and extensively read textbook especially concentrated on the Indian Diseases.

Eighth Edition, demy, 1324 plus 6 pages, 600 diagrams. Price Rupees Twenty two, postage Rs. 1/3 as. only.

Scientific Publication Concern

9, Wellington Square, Calcutta 13

prescribe

SECLOPEN

. . . . . and not just procaine penicillin.

SECLOPEN is fortified procaine penicillin, a product of Glaxo Laboratories, reputed makers of penicillin. There are good reasons why SECLOPEN is popular.

- SECLOPEN is painless.
- SECLOPEN is easy to prepare and handle. Simply inject distilled water and agitate—the preparation is ready for use.
- The content is adjusted to ensure withdrawal of the full dose.

GLAXO

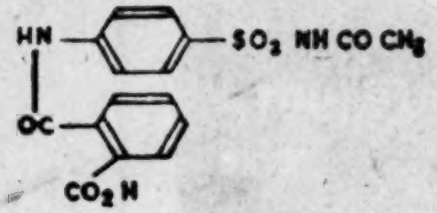
SECLOPEN

In single-dose and five-dose vials.

GLAXO LABORATORIES (INDIA) LTD., BOMBAY · CALCUTTA · MADRAS

Introducing——

SULFACYL



For cure and control of Typhoid group of fevers, Cholera, Bacillary dysentery, Ulcerative colitis, etc.

DETAILS SUPPLIED ON REQUEST FROM

G. D. A. CHEMICALS LTD.,

Manufacturers of PAMICYL-P.A.S. for the first time in India.

44, BADRIDAS TEMPLE STREET, CALCUTTA—4.

EKZEBROL

(Strontium Bromine, 10% 10 cc)

TOSSE - GERMANY

Its acknowledged and unrivalled efficacy in **All Itching Skin Affections** has made it the **medicament of choice** for the treatment of **Eczemas,** etc.

AND NOW

prompt, profound and prolonged relief in cases of **BRONCHIAL ASTHMA** has been reported.

Recent studies in Biochemistry have revealed that Strontium being the highest in series of Alkaline metals has a colloid solidifying action, allaying the sensitivity of cells responsible for allergic manifestations of Asthma. **HAS GIVEN UNEXPECTED RESULTS.**

Harmless and absolutely Non-toxic for intravenous and intramuscular Medication.

Packings :— Boxes of 3 and 25 amps.

1. RUMANOL with VERATRUM VIRIDE

For

HYPERTENSION

Made by: **Physicians Drug & Supply Co.**
Philadelphia-U. S. A.

Each Tablet Contains :

Veratrum Viride	...	100 mg.
Mannitol Hexanirate	...	½ gr.
Rutin	...	20 mg.
Phenabarbital	...	¼ gr.

Veratrum Viride is used for its prolonged hypotensive action, Mannitol Hexanitrate for its prompt Vasodialator action, Rutin to correct capillary fragility and phenobarbital for sedation.

Has no toxic or cumulative effects.

2. HEP-VI-PLEX
(Liver+IRON+B-Complex+B_{12})
10 cc Vials for Intramuscular use

3. PENICILLIN In OIL 30 lacs in 10 cc vials (96 hours type)

Apply for literatures and other informations to the :

Sole Agents : **M/S. JUGGAT SINGH'S SON & BROS.**

21B, KEVAL MAHAL :: MARINE DRIVE, BOMBAY.

STOCKISTS:

1. BENGAL : **M/s. Bhoopee Co.,** 4/1, S. N. Pandit Street, Calcutta.
2. KANPUR : **M/s. New India Medical Stores,** Birhana Road.

Malaria. ***..a one dose treatment***

The outstanding advantage of CAMOQUIN is the ease with which control of malaria can be achieved. A single dose can usually be relied upon to produce an effective clinical cure, while one dose every fortnight gives a high degree of protection.

CAMOQUIN has met with considerable success in all forms of malaria in Africa, India, the Philippines and South America and has been suggested as the product of choice*.

PARKE-DAVIS **CAMOQUIN**

Supplied in single-dose pack of 3 tablets and bottles of 1000.

* *"The superiority of 'Camoquin' over other antimalarials"*,

Parke, Davis & Company, Limited, *Inc. U.S.A.* Bombay

Printed by Sri Tarani Kanta Basu at the Nalanda Press, 159 & 160, Cornwallis Street, Calcutta
and published by him from 23, Samavaya Mansions, Corporation Place, Calcutta—13.
Editor—Dr. A. D. MUKHARJI

undisputed experimental evidence

Lepetit S.p.A MILAN (Italy)

For Safer, Effective Speedy Action

Synthomycetine

(PUREST SYNTHETIC CHLORAMPHENICOL)

The antibiotic with the widest range of antibacterial activity.

PACKING:

Synthomycetine Caps – Bottles of 12 Capsules of 0.25 gm. (250 mg.) each.
Synthomycetine Ointment – Tubes of 5 gms. containing 5% Chloramphenicol.
Synthomycetine Palmitate Syrup – bottles of 50 gm. containing 5% Chloramphenicol.
Synthomycetine Palmitate Granules – bottles of 30 gm. containing 10% Chloramphenicol.

LEPETIT – S. p. A.
VIA CARLO TENCA, 34
MILAN – ITALY

Sole Agents: RANBAXY & CO. LTD. HEAD OFFICE CONN: CIRCUS NEW DELHI.

Branches

DELHI-6
Ishwari Niwas
Near Bhagirath Palace.

BOMBAY-1
1st. Floor,
Queen's Mansion,
Bastion Road, Fort.

CALCUTTA-1
P/36
Royal Exchange Place
Extension.

MADRAS-1
Ebrahim Building,
3, Errabalu Chetty
Street.

PRINCE

PRCIS